JPRS 78753

14 August 1981

USSR Report

ECONOMIC AFFAIRS

No. 977

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ECONOMIC POLICY, ORGANIZATION AND MANAGEMENT

CURRENT PROGRAMS AT USSR CSA DESCRIBED

Moscow VESTNIK STATISTIKI in Russian No 6, Jun 81 pp 3-16

/Article by M. Korolev: "On the Scientific and Methodological Work of the USSR Central Statistical Administration"/

/Text/ The accountability report of the CPSU Central Committee to the 26th Congress of the Communist Party of the Soviet Union vividly illuminates the multifaceted activity of our party in the implementation of the decisions of its previous congress and shows the remarkable achievements of the Soviet people. During the period between the congresses our country made significant advances in all the directions of the creation of the material and technical base of communism. Enormous progress was also made by our science.

The 25th CPSU Congress set the task of "improving the system of recording and reporting and statistical information in accordance with the increasing demands of management and planning" for state statistics.[1] All the scientific and methodological work in the system of the USSR Central Statistical Administration during the past five-year period was subordinated to the accomplishment of this task.

First of all, this applied to an improvement in the entire system of statistical indicators--introduction of indicators for the reflection of new phenomena and processes in the country's economic and social development and modification of existing ones for a clearer demonstration of the characteristics of public production under the conditions of increase in its scale and complication of intersectorial and interterritorial relations.

At the same time, principal attention was paid to the indicators of the efficiency of public production in the national economy and in its individual sectors, of the quality of output and work and of the improvement in planning and in the mechanism of management in accordance with the decree dated 12 July 1979 of the CPSU Central Committee and the USSR Council of Ministers "On Improving Planning and Strengthening the Influence of the Economic Mechanism on Increasing Production Efficiency and Work Quality."

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[1] "Materialy XXV S'yezda KPSS" /Data of the 25th CPSU Congress/, Moscow, Politizdat, 1977, p 172.

During the period following the adoption of this decree the USSR Central Statistical Administration implemented a wide set of measures pursuant to the provisions of the indicated decree for the development of a system of new indicators and forms of reporting of production associations, enterprises and organizations, for a change in existing forms and for a revision of the methodology of recording, of a number of instructions and directives, of complexes of electronic information processing and of consolidated reporting.

As a result, a number of statistical indicators, that is, normative net output, proportion of products in the superior-quality category, limit of the number of workers and employees, standard of wages per ruble of output, limit of capital investments and construction and installation work, volume of commodity building output and so forth, were introduced into the practice of daily work.

Along with a revision of the system of statistical indicators and reporting, the administrations and divisions of the USSR Central Statistical Administration took an active part in the methodological elaboration of such legislative instruments connected with the further improvement in the economic mechanism as "On the Procedure of Planning and Recording the Growth of the Production of Products in the Superior-Quality Category," "On the Procedure of Determination of Long-Term Standards of Wages per Ruble of Output," "On the Procedure of Utilization by the All-Union Bank for the Financing of Capital Investments (USSR Gosbank) of the Funds Released Among Customers in Connection With the Transition to Settlements of Accounts Without Intermediary Payments...," "Methodological Instructions for an Evaluation of the Fulfillment of the Assignments of the Five-Year Plan at all the Levels of Economic Management in a Running Total From the Beginning of the Five-Year Plan and of the Annual Plan, in a Running Total From the Beginning of the Year" and so forth.

An increase in the balanced nature of plans on the basis of an expansion of the system of planned and report balances, a significant expansion of balance calculations and a more profound study of intersectorial relations is one of the most important requirements of the decree dated 12 July 1979 of the CPSU Central Committee and the USSR Council of Ministers.

Organs of state statistics responded to this with an expansion and intensification of balance work.

Methodological-program materials for the compilation of a regular intersectorial report balance for an expanded scheme and of an annual sectorial balance for consolidated sectors and a methodology of calculating the indicator of net output in an intersectorial report balance of production and distribution of products were developed. The Scientific Research Institute of the USSR Central Statistical Administration, as a result of research on the subject "Methodological Problems of Improvement in the Balance of the National Economy," prepared proposals for a reevaluation of the basic indicators of an intersectorial report balance in comparable prices and so forth.

A regular intersectorial report balance of production and distribution of products for an expanded list of sectors and products with the calculation of basic indicators both in actual and in comparable prices was developed in 1977. This major scientific study annually supplemented with intersectorial report balances of production and distribution of products for a consolidated list of sectors offers valuable information for an analysis of the proportions of expanded reproduction in dynamics, for an investigation of the structure of the national economy and of the changes in this structure with a determination of their basic causes and tendencies and of stable interconnections of sectors during the production and distribution of products and for a study of the general nature of production expenditures and of production efficiency. In addition to this, the USSR State Statistical Administration, for the first time in the practice of balance work, compiled and submitted to the USSR State Planning Committee times series of the distribution of products in the USSR national economy for production and nonproduction consumption in 16 years (1960-1976) in comparable prices for 18 sectors of the national economy and industry.

Intersectorial report balances were also compiled for the Union republics and in the RSFSR, for economic regions. The basic indicators of these balances were developed for "pure" national economic sectors, for "economic" sectors and for industrial ministries and departments.

Intersectorial report balances of expenditures of labor and fixed capital were developed for a more detailed study and analysis of intersectorial relations and proportions.

Extensive methodological work was done on the preparation of the development of report balances of labor resources for cities. Such balances will be compiled experimentally for some cities for 1980 and report balances for all republic, kray and oblast centers will be obtained for 1981. The basic methodological principles for the calculation of balances of labor resources for cities have now been prepared for examination at the Scientific and Methodological Council of the USSR Central Statistical Administration.

During the 10th Five-Year Plan great importance was attached to an improvement in the methodology of a statistical study of the efficiency of public production in the national economy and in its individual sectors.

The initial principles of a number of new indicators and methods of their calculation used in an analysis of the factors of increase in the efficiency of public production in industry, capital construction and agricultural production were developed and substantiated theoretically.

The system of indicators of efficiency of industrial production was improved, which, accordingly, was also reflected in reporting. A methodological investigation of the problems of a statistical study of the rates of growth of output of groups "A" and "B" was conducted. In practice, work on a statistical study of the mastering of new and reconstructed enterprises was realized.

The Standard Method of Calculating Losses and Reserves in the Sphere of Material Production was developed in 1977-1979. Investigations were conducted in 1979-1980 and methodological instructions for the calculation of losses and reserves in individual sectors of material production (industry, agriculture, capital construction and railroad transport) are being developed and introduced now.

Statistical organs did extensive methodological work on improving statistical information characterizing the processes of further specialization, concentration and agrarian-industrial integration in agriculture. In particular, a system of indicators for the study of agrarian-industrial enterprises and their financial-economic activity was developed.

Systems of indicators characterizing the combined economic effectiveness of capital investments and of work on the technical retooling and reconstruction of existing enterprises and the actual periods of recovery of capital investments were developed. A study of the actual periods of planning as compared with the standard periods, of specific capital investments per unit of commissioned capacity and of the reasons for the deviation of actual specific capital investments from standard and planned data was organized.

The system of indicators for the study of individual factors in the efficiency of operation of transport organizations was expanded. In particular, indicators characterizing the development of container and package shipments and the existence of centers for the processing of large-capacity containers, of facilities for packaging and transporting containers and of specialized reloading equipment and indicators characterizing the interaction of various types of transport facilities during the shipment of goods were introduced into reporting.

A set of investigations of the problem "statistical study of scientific and technical progress" were performed. As a result of these investigations proposals for an evaluation of the effect of scientific and technical progress on the material- and capital-intensiveness of output were developed. The prepared plan of a system of basic statistical indicators of efficiency of scientific and technical progress was approved by the commission of the Scientific and Methodological Council of the USSR Central Statistical Administration.

During the 10th Five-Year Plan much attention was paid to an improvement in the methodology of statistics of the quality of output and work.

The Scientific Research Institute of the USSR Central Statistical Administration developed the methodological principles of statistics of the quality of work in industry, construction, agriculture, freight transport and trade.

The indicators "proportion of products in the superior-quality category in the total volume of commodity (gross) output" and "production of products of an improved quality and assortment with separation of products with the sign "N" (novelty) from them" were introduced into the existing system of indicators and into the reporting of industrial enterprises and associations.

Systems of indicators and reporting on the quality of procured agricultural products were expanded.

The quality of construction began to be studied more profoundly. Reporting on the quality of construction of projects accepted for operation was introduced in 1976 and on the evaluation with which construction and installation work was performed, in 1977. Reporting on the fulfillment of the plan for planning and surveying work was supplemented with quality indicators. Along with the data obtained on the basis of annual reporting sample surveys were widely used in the study of the quality of housing and cultural-general construction. The quality and length of construction and the regularity of commissioning of dwelling houses, the popularization of the Orel experience in housing construction and the use of new standard plans in housing construction were studied on their basis.

The statistics of the quality of work of trade and public dining enterprises, as well as of the quality of products sold by them, was improved. The reporting of wholesale organizations was supplemented with indicators characterizing the basic causes of rejection of goods. Indicators of the results of check on the quality of individual assortment types of goods with the index "N" and with the State Badge of Quality were introduced in 1980.

Investigating the methods of a statistical evaluation of the quality of work in domestic services for the public, in 1979 the Scientific Research Institute of the USSR Central Statistical Administration prepared the tools and program for the development of data for a sample survey of the quality and periods of execution of orders and of the standard of services for the public by domestic service enterprises. Forms of statistical reporting on the quality of domestic services were introduced into statistical practice for the first time. On the basis of these forms sample surveys were conducted in 1979 and 1980 for all the Union republics.

Investigations of the population's working and living conditions and of the types of an increase in the volumes of services connected with the facilitation of housework, improvement in workers' rest and utilization of nonwork time were intensified.

The workers of the Scientific Research Institute of the USSR Central Statistical Administration conducted investigations of the improvement in the system of indicators of social statistics and methodology of their calculations and developed proposals for the utilization of the indicators of intensity of development of social processes and of the generalizing indicators of people's social living conditions and of the evaluation of these conditions from the point of view of the attainment of scientifically substantiated rational norms or standards. The preparation of the plan of a system of statistical indicators of the environment necessary for the analysis, planning and management of the quality of man's living environment in urban communities was a new direction in work. Among the methodological developments in social statistics it is also possible to note the refinement in the methodology of the count of people engaged primarily in physical and mental labor and the beginning of work on the preparation of methodological principles of the study of the effect of education on the family's way of life.

Scientific and practical workers of statistical organs made a serious contribution to the investigation of the methodological problems connected with the preparation, execution and development of materials of the 1979 all-Union population census. As is well known, accurate and detailed data on the size, distribution and structure of the population necessary for the study of the tendencies in the change in labor resources and for the determination of the ways for their most rational utilization were obtained as a result of this census.

The growing demands of planning and management organs for information on the population's natural movement and migration required an expansion of the range of indicators of the corresponding reporting. The data of this reporting in combination with the materials of the 1979 all-Union population census made it possible to improve the possibilities of forecasting and of current calculations of the size and structure of the population.

For the problem "investigation of demographic processes in the USSR on the basis of the data of the current recording and census of the population" the Scientific Research Institute of the USSR Central Statistical Administration developed methods of demographic calculations on the basis of the 1979 all-Union population census and of the current recording of the population's natural movement and migration. The basic methodological principles of the calculation of the set of demographic tables of marriage, birth and death rates, of the evaluation of current tendencies in the birth rate for forecasting the population and of current calculations of the structure of the population by nationality, marital state and level of education were prepared. A survey of social and demographic factors in the mortality of children under the age of 1 was conducted.

The establishment of the second stage of the automated system of state statistics required the mobilization of all scientific forces. This vast complex of scientific research, planning and experimental work was completed in 1980 with the successful delivery of the second stage of the automated system of state statistics to the State Interdepartmental Commission. New electronic information processing complexes converted to a new technical basis (unified computer system), more integrated and with greater analytical capabilities were put into operation. Seven functional start-up subsystems of statistics (of industry, agriculture, capital construction, material and technical supply, the population's budgets, culture and science and foreign countries), automated data banks (at the State Computer Center of the USSR Central Statistical Administration, at the republic computer centers of the central statistical administrations of Belorussia and Estonia and at the Statistical Administration of Tomskaya Oblast) and technical, information, program, personnel and legal support for the automated system of state statistics were established during the 10th Five-Year Plan.

In accordance with the program of work for 1976-1980 approved by the USSR State Committee for Science and Technology the development of the all-Union classifier of technical and economic indicators and of the automated system of its management was completed and their partial introduction was carried out. Preparatory work for the introduction of all-Union classifiers of the first and second stages of the unified system of classification and coding and on the coordination of classifications used in statistics was carried out.

The second stage of the automated system of state statistics made it possible to organize on a wide front the development of new computers and their means of communication. It should be noted that engineering and manufacturing planning and experimental work on the establishment of a system of statistical information teleprocessing was also carried out as part of the second stage of the automated system of state statistics. Advanced technology of automated statistical information processing with the use of data teleprocessing, automated data banks and a conversational mode with computers and nonpunch methods of information input into computers was developed. Some work of the second stage of the automated system of state statistics was displayed at the Exhibition of Achievements of the USSR National Economy and received a high rating.

Scientific research and planning work on the establishment of computer centers for collective use envisaged by the decisions of the 25th CPSU Congress deserve special attention. During the five-year plan such computer centers for collective use in the system of the USSR Central Statistical Administration were established and put into industrial operation in the cities of Minsk, Tallinn, Tomsk and Tula. The work of these centers showed the high efficiency of the advanced, new form of service for user-clients through various types of remote terminals with a fundamentally new technology of processing and use of information.

In the process of establishment of computer centers for collective use it was necessary to solve a number of complex scientific and technical problems connected with the selection and realization of planned solutions, establishment of the technical base and user networks and development and introduction of remote information processing. The completion, interfacing with the unified computer system and commissioning of teleprocessing hardware were ensured and 440 problems for 71 user and software ensuring support for user centers and the functioning of user networks were developed. Extensive work was done on the mastering of systems for controlling data bases and on the establishment on their basis of data banks for the sake of information services for organizations and enterprises in regions. Collectives of statistical administrations and of their computer centers actively participated in this work. The planning of computer centers for collective use was also carried out by scientific, scientific research and planning organizations of a number of ministries and departments, including the Scientific Research Institute and the All-Union State Planning and Technological Institute of the USSR Central Statistical Administration, the All-Union Scientific Research Institute of Problems in Management Organization of the USSR State Committee for Science and Technology, the Tomsk Scientific Research Institute of Automation and Electromechanics, the Tomsk Polytechnical Institute, the Siberian Physicotechnical Institute, the State Institute for the Surveying and Planning of Communication Installations of the USSR Ministry of Communications and of the Estonian SSR Ministry of Communications, production and technical administrations of communications in Tomskaya and Tul'skaya oblasts and so forth.

In general, close practical relations with the country's many scientific, research, planning and educational institutions during the solution of all scientific and methodological problems of statistics and participation of many scientists from other departments and organizations in the scientific and methodological work of organs of state statistics were the characteristic features in the scientific work of the USSR Central Statistical Administration during the past five-year plan. The Scientific and Methodological Council of the USSR Central Statistical Administration with its commissions, which examined about 150 major scientific and methodological problems during the 10th Five-Year Plan, plays an important coordinating role in this matter.

The direction and basic content of scientific research and methodological work of the system of the USSR Central Statistical Administration for the 11th Five-Year Plan are fully determined by the tasks facing state statistics on the basis of the decisions of the 26th Congress of the Communist Party of the Soviet Union and the report by Comrade L. I. Brezhnev, general secretary of the CPSU Central Committee, at the congress.

"The Basic Trends in the Economic and Social Development of the USSR for 1981-1985 and for the Period Until 1990" envisage the following: "To improve the quality and efficiency of recording and statistics and to refine recording documents and reporting in all national economic units as applied to present requirements of management, planning and analysis of economic activity with an efficient utilization of computer equipment."[2]

The basic trends also set the task of ensuring the further development and increase in the efficiency of the network of automated control systems and of computer centers for collective use, continuing their unification into a single statewide system of collection and processing of information for recording, planning and management.

Realization of these tasks, which are most important for the country's statistical organs for the 11th Five-Year Plan, will require a further improvement in the system of statistical indicators necessary for an all-around description of the fulfillment of the assignments envisaged by the decisions of the 26th CPSU Congress, by "The Basic Trends in the Economic and Social Development of the USSR for 1981-1985 and for the Period Until 1990" and by five-year and annual plans and of the course of fulfillment of the food program, the program for an expansion of the production of consumer goods, development of services, reduction in the application of manual labor, advance of machine building, power engineering and transport and saving of resources, other overall scientific and technical, economic and social object programs and plans for the development of the country's individual regions and territorial production complexes.

The system of statistical indicators should be directed toward an all-around study of economic and social processes and new phenomena in the developed socialist society, investigation of the structure of public production and of the efficiency of utilization of the production potential, attainment of high national economic end results, acceleration of scientific and technical progress, intensification of the integration of science with production and of the transfer of the economy to an intensive path of development, improvement in the quality of output and services in all national economic sectors and rise in the people's well-being.

The system of indicators should ensure the possibility for profound economic investigations of intersectorial and intrasectorial relations and proportions and of the distribution of productive forces and characterize the dynamic and balanced nature of the country's economy as a single national economic complex and will make it possible to analyze the most important generalizing indicators of national economic development--national income, labor productivity, capital-output ratio, material- and power intensiveness of output and utilization of natural, material, labor and monetary resources--to uncover the potentials existing in the national economy and to eliminate all possible losses.

The expanded board of the USSR Central Statistical Administration with the participation of chiefs of the central statistical administrations of the republics discussed the report by L. M. Volodarskiy, chief of the USSR Central Statistical

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2. "Materialy XXVI S'yezda KPSS" /Data of the 26th CPSU Congress/, Moscow, Politizdat, 1981, p 200.

Administration (see VESTNIK STATISTIKI, 1981, No 4), and approved the measures of the USSR Central Statistical Administration for the further improvement in state statistics resulting from the decisions of the 26th CPSU Congress and the report by Comrade L. I. Brezhnev, general secretary of the CPSU Central Committee. An extensive program of methodological work on statistics was envisaged as part of these measures for the 11th Five-Year Plan.

An improvement in the methodology of a statistical study of the social development of society and of implementation of measures for a rise in the people's well-being--for meeting the population's needs for varied high-quality food products, industrial goods and domestic services, for improving housing conditions, for overcoming significant differences between urban and rural areas and for erasing the distinctions between mental and physical labor--occupies an important place in this program.

Provision was made for the development of an interconnected system of basic indicators of social statistics for an overall analysis of social problems and of a system of indicators characterizing the intensification of the population's social homogeneity. A program and methodology of a sample survey of the changes in the population's social structure and a methodology of study of the differentiation of demographic processes by social and demographic criteria on the basis of the data of the 1979 all-Union population census will be developed. Studies of methodological-program problems connected with a sample survey of individual social and economic factors in the formation and development of the family and of a program for the social city document were envisaged.

The 26th CPSU Congress mapped out an extensive program of measures for raising the workers' standard of living. A study of the course of fulfillment of this program is an important task of organs of state statistics and a number of surveys and recordings were devoted to this. In connection with this the appropriate programs and methodology of a one-time recording of the bonuses, incentives and awards according to their types paid to workers and employees, of recordings of the number of workers, employees and kolkhoz members according to occupations, wage categories and forms and systems of wages, of a recording of the results of increase in the rates and salaries of workers in individual production sectors and of a survey of wages for workers according to occupations and for engineering and technical personnel according to posts in industry will be developed. Provision was made for an improvement in the methodology of the balance of monetary income and expenditure of the urban and rural population, of a sample survey of the income of families, workers, employees and kolkhoz members and of a calculation of their real income.

A methodology of calculations of the provision of the population (by social groups) with durable goods and of the per-capita consumption of fabrics, hosiery, leather footwear, soap and detergents will be developed for state trade statistics; a methodology of a sample survey of domestic services for the urban and rural population and of a survey of the time budget of workers, employees and kolkhoz members, for budget statistics; methodological-program problems of a study of the role of social and economic factors in an improvement in the living conditions of the rural population and of a sample survey of the opinion of working women on their living and working conditions, for social statistics; a methodology of a sample survey of pensioners and of a social and demographic sample survey of the population, for the population census.

Plans were made for the performance of a number of methodological investigations of problems connected with a statistical study of medical services for the public, of the work of cultural and educational institutions and of institutions for vocational guidance for students of graduating classes and of the training and utilization of personnel.

The investigations of the Scientific Research Institute of the USSR Central Statistical Administration on the problem "improvement in the statistics of social and demographic processes" envisage analytical and methodological work on demographic statistics providing for an analysis of the differentiation of death and birth rates and the development of the family according to the data of the 1979 all-Union population census and of the natural movement of the population during years close to the census, as well as according to the materials of special surveys. Work on improvement in the method of integral processing and analysis of data on the population's movement within the framework of the automated system of state statistics and on the development of a method of constructing demographic tables will also continue. The statistical study of social processes will include an improvement in statistical information on environmental protection and the development of methodological principles of a statistical study of problems of socialist competition.

The Division of Social Statistics and the Scientific Research Institute of the USSR Central Statistical Administration have an important organizing role in the improvement in the methodology of statistics of the social development of society.

An extensive program of work on an improvement in the methodology of a statistical study of the efficiency of public production and of the quality of products and work was envisaged.

The basic methodological principles of an overall analysis of statistical data characterizing public production will have to be developed at the beginning of the five-year plan. Plans are made for the development of methodological principles of the study of the effect of various factors on labor productivity and on a change in production costs and of proposals for the method of determination of the indicators of the level and dynamics of material intensiveness of industrial output and of the evaluation of the effect of the commissioning of new and mastering of commissioned capacities on the fulfillment of the output plan. The Administration of Statistics of Capital Construction is developing a methodology of recording the time factor during a statistical study of the efficiency of capital investments and the Administration of Statistics of Agriculture, programs and methodological instructions for one-time surveys of the study of the availability, storage and utilization of agricultural equipment, provision of agricultural enterprises with storage facilities and warehouses, mechanization of cultivation of various crops, utilization of the breeding stock of large-horned cattle and so forth. The Scientific Research Institute of the USSR Central Statistical Administration should develop methodological recommendations for an evaluation of the efficiency of newly commissioned enterprises and projects and of the methodology of an overall analysis of the detection of losses and reserves in capital construction.

Work on improvement in the methodology of study of the utilization of metalworking equipment and of workers' time at enterprises, of the causes of labor turnover and of losses and reserves in construction, of systematically unprofitable kolkhozes and sovkhozes and of the life of agricultural equipment and on improvement in the indicators characterizing the reduction in the application of manual labor and of the recording of the number of workers engaged in heavy physical labor will continue. Special programs and methodological instructions are developed for a survey of scientific production associations in agriculture, for a one-time recording of pedigree livestock and poultry, for a survey of the correlation of the level of prices and productivity of old and new equipment and for sample surveys of the fulfillment by individual industrial enterprises of the orders of trade for furniture, sports and tourist goods, sanitary engineering articles, orchard and garden implements and equipment for small-scale mechanization of agricultural operations.

A significant number of methodological investigations were devoted to problems connected with the statistics of the quality of products, work and services and to an improvement in the system of statistical indicators of the quality, methodology and tools of special recordings and surveys. In particular, the ranges of investigations characterizing the quality of services for the public expanded considerably. They include studies of methodological-program instructions for a one-time recording of the work of receiving centers for the collection of glassware from the population and surveys of the quality of trade services for the public by trade and public dining enterprises, of the operating schedule of enterprises, organizations and institutions servicing the public, of the state of domestic services in a number of cities, of the quality, periods of execution of orders and standard of domestic services for the public and of the periods and quality of fulfillment of work on major repairs of the available state housing.

The development of a methodology of recording the fulfillment of overall economic and social object programs, as well as programs for the development of territorial production complexes, holds a special place in the plans of methodological investigations of the administrations and divisions of the USSR Central Statistical Administration, as well as the Scientific Research Institute of the USSR Central Statistical Administration.

As noted at the 26th CPSU Congress, the development of the food program, which should ensure a significant increase in agricultural output, has begun now. This program should more closely link agriculture with sectors engaged in the transportation, storage and processing of its products and with trade.

For a successful statistical study of the course of fulfillment of the food program it will be necessary to solve a number of scientific and methodological problems. Scientifically substantiated proposals for the procedure of reflection in reporting of the course of fulfillment of the program should be worked out and methodological principles of a statistical study of the food complex, as well as of the sphere of production and technical services for agriculture, should be developed. All this should be reflected in an improvement in the entire statistical reporting of kolkhozes, sovkhozes and interfarm enterprises with due regard for the tasks of the agroindustrial food complex.

During the solution of a number of methodological problems connected with the collection, processing and analysis of information special attention should be drawn to the need for a study by statistics of the completeness and efficiency of utilization of agricultural land, of the available fixed productive capital and of the allocated limits of capital investments and material and other resources. It is necessary to analyze to what extent a dynamic and balanced development of sectors of agriculture, the processing industry, transport and trade and of sectors producing means of production for the entire agrarian-industrial complex is ensured. Statistical reporting should ensure an operative control over the course of fulfillment of deliveries of agricultural products to the state and of the maximum possible satisfaction of the population's needs for potatoes, vegetables and other products through their local production. It is necessary to have a complete picture of the production of agricultural products on the subsidiary farms of industrial, construction, transport and other enterprises and organizations and on the private subsidiary farms of citizens. For this purpose it is necessary in the very near future to develop methodological instructions on the procedure of recording the livestock and poultry grown by citizens on the basis of contracts with kolkhozes, sovkhozes and other agricultural enterprises, as well as on the procedure of counting the livestock and poultry purchased on the basis of contracts toward the fulfillment of the plan for state purchases. It is also necessary to develop a method of calculating the expenditure of fodder on the population's farms accepting livestock for breeding on the basis of contracts and a program and methodological instructions for a sample survey of the availability of livestock and its provision with fodder on private subsidiary farms. It is necessary to prepare methodological instructions for the procedure of elaboration of data on sown areas and on harvesting on the subsidiary farms of nonagricultural enterprises of various ministries and departments.

Statistical information should show the potentials for an increase in grain and fodder production as a result of an improvement in the system of farming and in the structure of sown areas, a more efficient utilization of fertilizers, improvement in meadows and pastures, the maximum reduction of losses and improvement in the quality of agricultural products and a prompt construction of grain storage facilities, warehouses and other premises for the preservation of products in a full volume. In connection with this provision was made for the performance of a number of methodological and economic investigations, including an all-around survey of the losses of basic agricultural products in the food complex and an analysis of the statistical materials obtained as a result of surveys.

Provision was also made for methodological work connected with a statistical study of social problems of rural development, of personnel retention on kolkhozes and sovkhozes, of the sale of agricultural products on the kolkhoz market, of the conclusion and fulfillment of contracts for bringing agricultural products to kolkhoz markets, of the supply of potatoes, fruits and vegetables to the population and so forth.

For the program for an increase in the production of consumer goods provision was made for the development of proposals for the procedure of reflection in reporting of the course of its fulfillment and of improvement in reporting on the production of products from local raw materials and waste and in reporting on the quality of consumer goods. Programs and a methodology of surveys of the demand of families for consumer goods and of enterprises producing goods for cultural-general and economic purposes will also be developed.

For the program for an increase in the efficiency of utilization of fuel and power resources proposals for the procedure of reflection in reporting of the fulfillment of measures for a better utilization of these resources will be developed.

The development of a system of indicators of a short report fuel and power balance is planned. The existing instructions for reports on the fulfillment of norms and assignments for an average reduction in the norms of expenditure of fuel and thermal and electric power will be revised.

In the plan for methodological work provision was made for the preparation of proposals for the procedure of reflection in reporting of the fulfillment of measures for ensuring a rational utilization of metal and for the development of a method of determination of the waste of ferrous metal in machine building and metalworking and of a methodology for the compilation of the steel balance.

In the scientific research of the Scientific Research Institute of the USSR Central Statistical Administration within the framework of the programs for an efficient utilization of material resources principal attention will be given to the development of a methodology of a statistical study of losses and reserves. Provision was also made for specific surveys directed toward the determination of the actual volumes of some types of losses and the detection of their causes. Losses will be studied in an overall manner, that is, at all the stages and phases of production, transportation, storage, processing and consumption.

The investigations of this major national economic problem will uncover losses arising as a result of a disturbance in reproduction proportions and will determine the effect of losses on the efficiency of public production.

During the examination of losses in the process of utilization of capital investments and of the production of basic agricultural products special significance will be attached to the detection of losses connected with the activity of infrastructure subsystems (transport, material and technical supply, procurements, trade and so forth).

Work on improvement in the system of statistical indicators for an observation of the course of formation and development of individual regions and territorial production complexes will be intensified during the 11th Five-Year Plan. Special attention will be given to indicators and reporting for the West Siberian Petroleum and Gas Complex.

An extensive program of work on a statistical study of scientific and technical progress was outlined. The implementation of overall scientific and technical programs developed by the USSR State Committee for Science and Technology, the USSR State Planning Committee and the USSR Academy of Sciences is one of the remarkable characteristics of the new five-year plan and the organization of statistical control over the course of their fulfillment, one of the most important tasks of statistics.

"It is necessary," Comrade L. I. Brezhnev said in the accountability report of the CPSU Central Committee to the 26th Party Congress, "to increase the personal responsibility of managers of departments, enterprises and institutes for the production of new types of products and for the introduction of advanced, new technology. It is necessary to eliminate everything that makes the process of introduction of new things difficult, slow and painful. Production should be vitally interested in mastering the fruits of thought and labor of scientists and designers more rapidly and better."[3]

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3. "Materialy XXVI S'yezda KPSS," Moscow, Politizdat, 1981, p 43.

Therefore, the organization of a statistical observation of the course of fulfillment of these programs at all their stages from the beginning of scientific research and planning work, including experimental and design studies, until the introduction of results into production is the basic task for organs of state statistics. At the same time, all the most important parameters envisaged by a program should be taken into consideration, the periods and scale of fulfillment should be controlled and everything that hampers its implementation should be uncovered promptly.

The Division of Statistics of Technical Progress, which heads this responsible work, should prepare methodological instructions for the procedure of organization and presentation of report information on the fulfillment of scientific and technical programs, on the consolidated development of this information and on the economic efficiency of realization of the results of scientific research and experimental design work. It is also necessary to develop a program for the generalization of data on the course of fulfillment of the plan for the commissioning of pilot installations envisaged by scientific and technical programs, because the success of introduction of the results of science into production largely depends on this. In general, it is necessary to improve in the maximum possible way the methodology of a statistical study of the link between science and production, to make more one-time recordings of the results of activity of scientific research and design organizations, associations, especially scientific production associations, and enterprises for the performance of scientific research and experimental design work and for the introduction of completed studies into production and to control the fulfillment of the plan for the basic indicators of technical progress and the introduction of new technology into national economic sectors.

Work on an overall introduction of new indicators and economic standards in connection with the improvement in the economic mechanism directed toward an increase in production efficiency and work quality will continue during the new five-year plan. Pursuant to the decree dated 12 July 1979 of the CPSU Central Committee and the USSR Council of Ministers "On Improving Planning and Strengthening the Influence of the Economic Mechanism on Increasing Production Efficiency and Work Quality" plans were made for the preparation of proposals for the procedure of planning and recording industrial products throughout republics, krays and oblast under the conditions of application of indicators of the total volume of output differentiated by sectors.

Provision was also made for the preparation of instructions for the compilation of reports of enterprises on output and labor productivity in connection with the transition to comparable, new prices as of 1 January 1982, as well as of programs and instructions for a survey of the level of profitability of output of individual industrial sectors under the conditions of new wholesale prices.

Instructions for the procedure of provision of local planning bodies with the necessary statistical data for the development of five-year and annual plans on the entire territory of the republic, kray and oblast will be prepared. A methodology of compilation of the territorial report balance of production and distribution of key types of products and of balances of labor resources throughout republics, krays, oblasts and a number of cities will be developed. A system of indicators of social development for all territorial levels and methodological recommendations for it are also being developed.

Plans are made to continue methodological work on improvement in the document of a production association (enterprise), in reporting characterizing the brigade organization of labor, fulfillment of output norms and state of labor standardization and in reporting on scientific labor organization in industry and on recording the drawing of material resources into the economic turnover. Methodological principles of compilation of the physical-cost report balance of equipment and a method of compilation of the report balance of financial resources will be developed.

The further development of the automated system of state statistics and the establishment of its third stage for the purpose of improving the methodology of calculation of statistical indicators, methods of economic and statistical analysis and reporting are envisaged during the 11th Five-Year Plan.

The attainment of qualitative shifts in the automation of statistical operations and the creation of the necessary prerequisites for a switchover to a wide use of modern methods of storage, processing and transmission of statistical information for the purpose of improving the quality and efficiency of recording and statistics are the main tasks of these investigations.

The following new functional subsystems will be established within the framework of the third stage of the automated system of state statistics: of the balance of the national economy, statistics of technical progress, transport, natural resources, finances and prices, social statistics, population statistics, labor and wages, trade, housing and municipal services and foreign economic relations. Thereby, the establishment of functional subsystems in all the basic functional and sectorial trends in statistics will be completed.

A universal conclusion of the transfer of the software of electronic information processing complexes with the Minsk-32 computer to the unified computer system is planned. System software ensuring a complete interconnected technological process of statistical information processing will be developed, a multiprogram mode of solution of problems on a computer will be introduced, a display system of information-reference services for the central apparatus of the USSR Central Statistical Administration on the basis of utilization of the automated data bank will be established and the division of consolidated statistics and statistical methodology will develop methodological recommendations for an extensive utilization of mathematical and statistical methods during the processing of statistical information on computers in the system of the USSR Central Statistical Administration and establish a system of key indicators of the country's economic and social development for their introduction into automated data banks for the purpose of obtaining the necessary reference information with the use of displays. Provision was also made for the establishment of automated data banks in a number of republic computer centers of the Central Statistical Administration of the Union republics and in the computer centers of oblast statistical administrations. In this connection of special significance is the work on equipping computer centers on an oblast level with computers of a single series and on developing a system of statistical information teleprocessing on a republic level of the automated system of state statistics and the scientific research of the Scientific Research Institute of the USSR Central Statistical Administration on distributed data bases.

Within the framework of the establishment of the third stage of the automated system of state statistics work on strengthening the material and technical base of the computer system of the USSR Central Statistical Administration will continue, the equipping of organizations with devices for data preparation on magnetic carriers will be ensured, subdivisions of operative polygraphy will be established in a number of information computer centers, many computer centers will be reequipped with more productive printing devices and experimental work on the establishment of a distributed computer system in one or two regions will begin.

The development and introduction of all-Union classifiers of technical and economic information in the system of the USSR Central Statistical Administration will be completed during the 11th Five-Year Plan.

Work on the interaction of the automated system of state statistics with automated systems of planned calculations and sectorial automated control systems will be developed significantly.

Plans are made to introduce overall mechanization in accounting in 1,600 agricultural enterprises in the country and in 32 regions in the country this work will encompass all agricultural enterprises. Overall mechanization in accounting will be also introduced in 870 centralized accounts departments of budget institutions.

In the light of the decisions of the 26th CPSU Congress during the 11th Five-Year Plan the USSR Central Statistical Administration envisages the further development of a network of territorial computer centers for collective use of the system of the USSR Central Statistical Administration in eight cities and the fulfillment of a set of operations for the establishment of the second stage of computer centers for collective use in the cities of Minsk, Tallinn,Tula and Tomsk.

Plans are made for the further development of the technical base of the automated system of state statistics with its subsequent integration through a network of computer centers for collective use with the state network of computer centers.

Computer centers for collective use will be established on the basis of machine complexes including the YeS-1035 and YeS-1045 computers with the use of domestic data teleprocessing systems on the basis of the MPD-1A and MPD-2 data transmission multiplexers. The number of users connected to computer centers for collective use will depend on the amount of supplied equipment in teleprocessing systems, but will average 25 to 30 users.

The development of the second stage of computer centers for collective use will be based on more powerful third-generation computers of the YeS-1065 type, which make it possible to expand the user network to 100 users and more.

Thus, during the 11th Five-Year Plan organs of state statistics will have to perform a large volume of scientific research and methodological work on refining statistical information and on improving its quality and effectiveness for the purpose of increasing the efficiency of management and functioning of the economic mechanism. It is important that this large-scale and responsible work be well organized and thoroughly coordinated from the very beginning. In accordance with the decisions of the 26th CPSU Congress it is necessary to maximally increase the efficiency of scientific research and methodological work, to concentrate efforts and the allocated funds on key directions, to refine the coordination of activity of all executors, which directly applies to the Scientific and Methodological Council and to the Division of Consolidated Statistics and Statistical Methodology, and to more rapidly introduce the results of scientific and methodological developments.

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ECONOMIC POLICY, ORGANIZATION AND MANAGEMENT

ASSOCIATION OFFICIAL DISCUSSES EFFICIENCY

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 6, Jun 81 pp 87-92

/Article by V. Shcherbakov, chief of the Economic Planning Administration of the AvtoVAZ Association (Tol'yatti): "Stimulation of the Efficient Operation of Associations"/

/Text/ The activity of the association as the main structural subdivision of the national economy is dictated by the goal of socialist production: the maximum satisfaction of the needs of society with fewer expenditures. The activity of enterprises by its content cannot fully reflect the national economic goal, being a special form of the manifestation of the latter, a modification of it. Consequently, local criteria and the cost accounting indicators of the evaluation of the work of the enterprise (association) logically ensue from the goals of socialist production.

In examining from this standpoint the cost accounting fund-forming indicators, which were established for 1981 and other years of the five-year plan, it is possible to note that primarily value indicators (the increase of labor productivity, the proportion of output of the highest quality category and so forth) are used, and the crediting of stimulation funds is carried out as a percentage of the profit. In other words, the amount of the funds substantially depends on the amount of the actual profit, which serves as the most important fund-forming indicator.

However, the main goal of socialist production cannot be transformed into the derivation by the enterprise (association) of the maximum profit from its activity. The increase of the profit reflects only the value contribution to the common cause. From this standpoint the profit is only an effective means of the development of socialist production. The need to meet the demand of the members of society dictates the production of specific items. Consequently, cost accounting indicators, as well as the economic evaluation of the activity of the enterprise should also be based on the calculation of the most important indicators in physical form. The instability of the output of inexpensive items, particularly children's clothing, toys and so on, is proof of the fact that the use of cost accounting indicators only in value form cannot solve the problem of stimulating the production of specific items.

The physical indicators along with the value indicators ensure the proper interconnection of the local cost accounting goal of the enterprise with the main national economic goal. The decrease of these indicators should result in not smaller, but even larger economic penalties than the decrease of the value indicators. It is possible to realize this methodological premise by elevating physical indicators to the rank of fund-forming indicators. Only in this case will the solution of national economic problems and the output of the designated items be purposefully stimulated. In the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 on the improvement of the economic mechanism it is indicated that the evaluation of the results of the economic operations of enterprises, as well as economic stimulation should be carried out first of all on the basis of their fulfillment of the plans of the delivery of products according to the products list and on time in conformity with concluded contracts.

The enhancement of the role of the physical indicators of production will unquestionably affect the increase of efficiency. Further development, in our opinion, should lead to the establishment of a standard of contributions to stimulation funds (not just to the material incentive fund) from the increase of the output in physical terms at least for the most important items.

At the Volga Motor Vehicle Plant the material incentive funds were formed in accordance with the standard of deductions from the profit for each percent increase of the output of vehicles; the assimilation of the planned labor productivity. This was accomplished in full only in case of the fulfillment of the plans on the profit and the most important products list and with the observance of the normal ratios between the increase of labor productivity and the average wage.

A new procedure of calculation was also used: the standards of the deductions from the profit for the five-year plan were established on the basis of the financial five-year plan in stable amounts for each year as a percentage of the wage fund of the base year of the five-year plan. Of the total amount of the material incentive fund when calculating the standards 60 percent was allocated for stimulating the increase of the output of motor vehicles and 40 percent was allocated for stimulating the assimilation of the planned production cost of motor vehicles.

When implementing the five-year plan the amount of the material incentive funds in the annual plans was determined with allowance made for the deviation of the planned growth rate of the output of motor vehicles, the coefficient of the assimilation of the production cost and the labor productivity as compared with the analogous indicators, which were established with respect to the five-year plan as a progressive total against the base year. The standard of the increase (decrease) of the material incentive funds for a 1-percent deviation of the growth rate was established as a percentage of the wage fund of the base year and was calculated:

with respect to the output of motor vehicles--by dividing the proportion of the material incentive fund, which is being allocated for stimulating the increase of the output of motor vehicles during each year of the five-year plan, by the average annual growth rate of the output of motor vehicles;

with respect to the assimilation of the planned production cost--by dividing the proportion of the material incentive fund, which is being allocated for stimulating the increase of this indicator, by the average annual growth rate of the coefficient of the assimilation of the planned production cost. The latter is defined as the ratio of the planned production cost of a motor vehicle to the planned production cost for each year of the five-year plan;

with respect to labor productivity--at the rate of 0.3 percent, and the labor productivity is calculated in units of produced motor vehicles per industrial worker engaged directly in production.

The fund for sociocultural measures and housing construction by years of the five-year plan was established in the amount of up to 40 percent of the material incentive fund of the corresponding year.

The production development fund was formed from two sources: up to 40 percent of the assets of amortization, which were intended for the full replacement of fixed production capital, and deductions from the profit according to standards which were calculated at the level of the average amounts (as a percentage of the average annual value of the fixed production capital) for a group of related enterprises.

For an increase or decrease of labor productivity by 1 percent the material incentive fund and the fund for sociocultural and personal measures are increased or decreased by 500,000 rubles, for a 1 percent deviation from the production cost incorporated in the five-year plan the stimulation funds are increased or decreased by 500,000 rubles, a 1-percent deviation from the plans of the output of motor vehicles entails a change of the funds by 160,000 rubles.

The indicated mechanism of the formation of funds differed from the traditional mechanism by the fact that in it, first, the value indicators of stimulation, in accordance with which the funds were usually formed (sales, the profit, the profitability), did not lose their role. The diverse system of the calculation of the output of motor vehicles with respect to the rated capacity made them sensitive not to the base of the preceding year, but to the level of intensity and to the built-in potentials. Second, labor productivity is measured by the indicator of the output of motor vehicles per production worker. This stimulates the output precisely of motor vehicles, and not any other product. Third, an indicator, which characterizes the ratio of the rated and planned (actual) production cost of a motor vehicle with respect to the design, was introduced.

These measures made it possible to enhance considerably the role of the plan as the organizing basis of production. At the same time the demands on the quality of planning, its scientific soundness and intensity, orientation, integrity and feasibility increased sharply, for the fulfillment of the plan is stimulated 30 percent better than the exceeding of it, while its breakdown is punished more severely. As a result stepped-up plans for the entire five-year plan, which aim at the achievement of the planned technical and economic indicators, have been set for the plant and its subdivisions. Their soundness is demonstrated by the fact that during its 10-year history the plant has fulfilled the monthly, quarterly, annual and five-year plans by 100-101.5 percent.

The chosen cost accounting indicators aim the collective of the plant toward the end result of the reproduction cycle--the increase of the output of high quality motor vehicles with the minimum expenditures. Here the increase of the volume of the gross (sold) output and the increase of the profit and the profitability are becoming not an end in themselves, but calculated values. Their role does not decrease because of this, as some economists suggest. The consumers are certain that at the end of the year they will indeed receive motor vehicles, and not individual parts of it, as frequently happens, when a drive is under way for the achievement not of the physical but the value indicators.

The physical indicators leveled the vicissitudes of pricing and the pattern of production. This expedited the decrease of not only internal expenditures, but also the expenditures of related enterprises. The plan acquired a stable base for the calculation of all the funds (the wage fund, the material incentive fund, the production development fund and so on). The real opportunity arose to compile a five-year plan, which was balanced with respect to all the indicators and sectors, and, hence, to elaborate a long-term technical, economic and personnel policy.

In our opinion, the system of intraplant cost accounting at associations also requires serious improvement. The production association is the only production economics complex, in which all the main management, production, legal, economic and other functions are centralized. A direct sharing of activity takes place between the subdivisions; the movement of the product does not have a real commodity form. The product of labor assumes a commodity form proper upon leaving the associations. It is the fruit of joint labor. Therefore the relative economic isolation of the participants in production either is completely eliminated or is at least sharply reduced. Only individual elements of economic isolation remain.

Directly social relations and the direct sharing of activity play the main role in the assurance of reproduction. Nevertheless the commodity-money relations within the production association do not disappear entirely; they appear as subordinate, auxiliary relations which are used as accounting categories. It is not by chance that, as a rule, not wholesale, but planned accounting prices, that is, not commodity, but planned prices, which are void of a real commodity content proper, are used for contra accounts between subdivisions and the evaluation of their activity. Cost accounting within the production association is a synthesis of the planned relations of direct exchange and commodity-money relations, with the decisive role of the former. In the industrial association, being examined from this standpoint, it has very substantial differences.

Production in the industrial association is not fully socialized. Therefore the association itself is at variance with the financial system, planning and other organs not as the producer of a commodity, but as a representative of independent producers, which performs individual functions in the management of production and indirectly influences the production of goods. The industrial association as a cost accounting unit, on the one hand, performs the role of a unified economic center and bears cost accounting responsibility for the results of work. On the other hand, the commodity is produced not by the association as a whole, but by the independent cost accounting enterprises which belong to it. Such a contradiction is aggravated by the following: the active influence of the association on the cost accounting impact of the activity is held in check by the fact that the profitability of its work and the amount of fixed and working capital are only the resultant of the corresponding indicators of the independent enterprises. Thus, the influence of the association on the formation of cost accounting funds is also limited.

The different content of the cost accounting relations in the production and the industrial association also presumes a different approach to the organization of cost accounting in them.

Within the production association there are no real commodity relations between the subdivisions (although they do affect production), with respect to each other the subdivisions do not act as commodity producers, the real profit and profitability can characterize only the operation of the association as a whole. Moreover, the subdivisions do not affect at all such factors as the sale of products and the financing of production, since they are centralized at a higher level. Therefore the use in the subdivisions of the cost accounting indicators established for the association as a whole does not conform to the real relations between them. The differentiation of the commodity cost accounting indicators among the subdivisions (the distribution of the profit, the introduction of a conditional fee for capital and so forth) creates the appearance of the consideration of the contribution of each one to the formation of the necessary profit and profitability of the association.

The procedure of forming the cost accounting funds of the subdivisions in a production association should also be integrally connected with the organizational structure and should conform to the real relations between the subdivisions. The crediting of the funds of the association as a whole is centralized. However, in a number of instances a system of the internal crediting of funds is created in it subject to the indicators of the efficiency of the work of the subdivision. In our opinion, such a practice contradicts the real conditions of the functioning of the association as a whole. First, the special, relatively isolated economic interests of the subdivisions hinder directly social planned relations and complicate the control of the reproduction process. Second, this can worsen the efficiency of the work of the association, since the inclination for the concealment of the real reserves and for products list changes as against the plan inevitably arises, even when the subdivision is actually striving for the exceeding of the plan assignments. For example, if one of the subdivisions exceeded the plan on the volume of output, this fact is considered positive. But the association can incur losses, since outside the plan of financing the unfinished production will increase. Consequently, it is necessary to take out credit with high interest against it. Moreover, the consumer does not have the opportunity to warehouse these products, and so on.

Finally, in the case of the system of internal crediting a situation may form, when the association simply will not have anything to settle accounts with the subdivision. The essence of internal crediting is, in essence, the process of withdrawing funds from the total amount in accordance with special indicators. The subdivision, which has exceeded its "own" indicators, has the right to a greater amount. But the association as a whole cannot credit this increment, and, if it exceeds the amount of the reserve, the situation is irresolvable. Consequently, in practice it is necessary either to leave a considerable reserve, thereby reducing the amount of distribution, which leads to a relative decrease of the interest of all the subdivisions, or to create conditions under which the subdivision cannot achieve any significant exceeding of the desired parameters. But then the system of internal crediting cannot have a serious influence on the increase of the efficiency of the subdivisions. In this case the entire operation also loses meaning. In our opinion, it is necessary to transfer a portion of the total funds to the production subdivisions and to establish a direct dependence between the amount of this portion and the total amount of the fund. Thus, a system of comprehensive economic interest is created, they all work toward the end result; mutual assistance, collectivism and health competition in labor are developed.

The cost accounting of the industrial association, in case of which production is not transformed into a unified socialized complex and the commodity relations between enterprises and the relative isolation of their economic interests do not disappear, should have different forms. The cost accounting funds are credited to the enterprises, while the total funds are formed by the centralization of a portion of the profit or the corresponding funds of the united enterprises. The withdrawal of a portion of the assets of the enterprises hardly conforms to their interests.

At the same time the centralization of assets makes it possible to concentrate forces and assets on the key directions, and from a national economic standpoint it is quite justified. On the whole the enterprises are also interested in this, since the assets in the end are spent on their own development and the increase of the efficiency of their work by means of the intensification of specialization, the extension of cooperation, the replacement of equipment and technology and so on, which also leads to the corresponding increase of the profit.

In our opinion, it is expedient as a whole to maintain the existing procedure of the crediting and centralization of funds. But it is necessary to improve the standards of deductions to the centralized funds so as not to decrease the interest of the enterprises in the improvement of the indicators of their own efficiency. It also seems rational to maintain the internal cost accounting indicators of the enterprises, having made them comprehensive in physical and value form. The internal economic interrelations, including with the budget and banks, should fully apply to enterprises.

The point of view, in accordance with which it is necessary to carry out centrally the settlements with the budget and bank organs, has become widespread in recent times. Moreover, ostensibly the simplification, the shortening of the time of transfers, the lightening of the load of banks and the reliability of payments to the budget are the main argument. Such arguments are very debatable. First, the industrial association does not have any indicator of its own, which reflects the amount of the corresponding indicators of the enterprises. The enterprises have the real profit, on which the payments are based. It is also impossible to have it at the level of the association other than in the form of deductions, since it emerges from the sale of a commodity. The latter is produced and sold not by the association, but by the enterprise. Centralized selling not only will complicate the contra accounts and increase the inefficient shipments, but also will not solve the problem, since all the payments to the budget depend on the amount of fixed and working capital. The latter in the case of independent enterprises cannot be centralized. Consequently, the payments should be made in accordance with average indicators, which inevitably gives rise to the inaccuracy of the payment and a large number of recalculations. The number of bank transactions accordingly will increase considerably.

Second, centralized settlements decrease the sensitiveness of cost accounting stimuli and the influence of all management decisions on the economic situation of the enterprises. On the one hand, this will affect the overall efficiency of the work of the association as a whole and, on the other, will decrease the effectiveness of such important economic levers of the management of the enterprises as the fee for capital, credit and so forth.

In our opinion, the system of deductions for centralized funds, and not the centralization of deductions, not only conforms to the real relations between the association as a whole and its subdivisions, but also creates a mutual interest in the increase of efficiency. The standard deduction maintains the interest of the enterprise in the increase of efficiency. It serves as a unique guarantee of the substantiation of the cost accounting indicators given to it. In case of their decrease for reasons not dependent on the enterprise or the groundless overstatement of the plan indicators the losses of stimulation funds can be offset from centralized sources. Finally, even the reliability of the payments to the budget in the case of the centralization of sources and settlements does not increase. If the settlements are made in accordance with average or planning standards, the association as a whole and, consequently, the "innocent" enterprises lose, since the deductions do not correspond to the real payments to the centralized funds, or the budget fails to receive a certain amount. For the purpose of increasing the reliability of the payments to the budget it seems expedient to offset the amount insufficiently transferred by the specific enterprise from the centralized funds with subsequent resettlement between the association and the enterprise.

What has been said makes it possible to conclude that the cost accounting at the industrial enterprise is complete with respect to the enterprises and partial with respect to the association as a whole.

The increase of the cost accounting interest of the association by artificial means through the centralization of the functions not characteristic of it does not correspond to the real relations and as a result does not yield an impact. Thus, relations different in their nature and content are concealed under cost accounting at the production and the industrial association. Consequently, the forms of their organization should also be different.

The AvtoVAZ Association, although called a production association, essentially is an industrial production association. With respect to the works of the Volga Motor Vehicle Plant (the metallurgical works, the press works, the assembly works, the body assembly works, the works of auxiliary shops, the generator and starter works) it is a production association, while with respect to the plants (the Belebey Plant of Motor Vehicle Standards, the Dimitrovgrad Motor Vehicle Unit Plant, the Skopin Motor Vehicle Unit Plant, the Administration of Motor Vehicle Maintenance and the AvtoVAZremstroymontazh Trust) it is an industrial association. It is expedient to regard the economic mechanism of the association from this standpoint.

The works of the Volga Motor Vehicle Plant are a complex of itemwise and technologically specialized subdivisions which are closely connected by cooperation and the mutual conversion of products. The management of the development of the complex is concentrated mainly in the staff of the general board of directors. Executive functions have been retained by the works. For the purpose of eliminating possible conflicts between the special interests of the works and the association the economic stimulation funds are formed centrally. The works receive their share of the funds by the crediting of the stipulated amount of the bonus for each indicator. The fulfillment of the plan of the output of products and the most important products list gives the right to the crediting of a bonus. The latter is awarded for the fulfillment of the plan with respect to each main indicator separately.

The amount of the bonus is strictly specified and does not depend on the extent of the exceeding of the plan with respect to the indicators. With proper planning there can be no appreciable exceeding of the plan. An overfulfillment of any significance can be achieved only as a result of products list changes. Neither, as a rule, is beneficial.

The mechanism of the management of affiliated plants appears somewhat differently. Their output does not need further conversion; they are separated territorially from the main plant; they retain all the rights of an independent industrial enterprise. The association provides them with the appropriate assets and resources with the right of their subsequent independent disposal and monitors the output parameters of the work and general questions. Therefore the entire set of cost accounting indicators, which is identical to the indicators of the association, applies to the plants. The plants enter independently into interrelations with local banking, budget and planning organs and are fully self-supporting, contributing to the fund of the association 15 percent of the received profit for the formation of the centralized funds.

The external economic relations of the plan and the association are analogous, while the works, in essence, do not have them outside the association. Cost accounting is also organized accordingly. Such a procedure has been maintained for two five-year plans and has confirmed its effectiveness in practice.

The merger of enterprises into a unified production economics complex makes it possible to carry out the fundamental rationalization of the economic mechanism and thereby to increase significantly the economic impact of the association. In our opinion, the possibilities of improving the economic mechanism are still not being fully utilized; the formal incorporation of the previously independent enterprises into a unified complex is not being backed by the appropriate change of the structure and mechanism of management. Meanwhile, there is the favorable experience of the Volga Motor Vehicle Plant and the enterprises of various sectors (more than 100), which have concentrated specialized and functional operations not directly connected with the output of the main product in the large subdivisions of the plant. The personnel engaged in maintenance, supply, day-to-day management and preproduction are concentrated in special subdivisions, and the management of their performance (at the level of the deputy director of the works) is carried out centrally. All the functional personnel (economists, labor specialists, process engineers and so forth) have also been removed from the shops. As a result a new structure of the management of production has been created, the clear-cut assignment of the duties of the line and functional personnel has been carried out. Such reorganization in itself is effective and, in addition to the improvement of the management of production and the increase of the efficiency of the solution of all problems, makes it possible to decrease substantially the number of management personnel. Thus, at the Volga Motor Vehicle Plant the engineering and technical personnel and employees make up 14.5 percent of the total number of industrial personnel engaged directly in production, while the sectorial indicator is equal to 20 percent on the average. Bearing in mind that industry has more than 50,000 enterprises, one such rearrangement of the organizational structure can yield a serious impact.

The improvement of production management cannot be confined only to the changeover to a new organizational structure. The corresponding rearrangement of the entire economic mechanism is necessary. In our opinion, the new structure of management also presumes a new type of cost accounting--functional cost accounting. Only the functional services can have a real influence on the indicators of the efficiency of work in the presence of the new structure (and in the presence of the old structure). They formulate the plan, elaborate the standards, analyze the causes of the deviation from them and so forth. Therefore it is also expedient to make them responsible for the achievement of the corresponding indicators of efficiency. The line personnel should be responsible for the work with the collective and the deviations from the prescribed parameters of work. In other words, it is necessary to shift the center of economic work from the shop to the functional subdivisions; "production" cost accounting is being transformed into "engineering," functional cost accounting. It supplements the planning, organizational and other relations and creates an efficient system of economic liability for their actions.

Such a system of cost accounting, which has been in operation for more than 10 years now, has shown its effectiveness. At the Volga Motor Vehicle Plant the corresponding functional subdivisions monitor all the types of production and marketing costs. Thus, the administration of technical development of the association is responsible for the fulfillment as a whole of the assignments on the reduction of the materials-output ratio and the labor-intensity of production, the freeing of workplaces due to technical measures and the preparation of the output of new products. It plans the indicators for the coperformers: the administration of the main designer and laboratory research operations, the divisions of the works.

Thus, the organizational structure of the association is being strengthened by the system of economic stimulation and responsibility for the high quality performance of the work, while the system of indicators being used stems from the functions of the subdivisions.

In our opinion, the examined mechanism is in full accord with the nature of production associations, is connected with the commenced reorganization of industry and is conducive to the further increase of production efficiency.

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CSO: 1820/209

INVESTMENT, PRICES, BUDGET AND FINANCE

FIXED CAPITAL REVALUATION, AMORTIZATION UNDER REVIEW

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 6, Jun 81 pp 62-70

/Article by M. Zavalishchin and A. Malygin: "On the Revaluation of Fixed Capital and the Refinement of the Norms of Amortization (For Purposes of Discussion)"/

/Text/ The construction of the material and technical base of communist society in the USSR is based on the available economic potential and the utmost utilization of the achievements of scientific and technical progress--on the development and introduction in production of new machines and equipment and advanced production technology. Suffice it to say that during the years of the Ninth Five-Year Plan and 4 years of the 10th Five-Year Plan (1971-1979) alone 24,000 new types of machines, equipment, apparatus and instruments were developed, assimilated and placed into series production in the USSR. The number of mechanized flow lines installed at enterprises of individual sectors of industry from 1971 to 1979 increased by more than 52 percent, while the number of automatic lines increased nearly 2.4-fold.[1]

In the total amount of fixed capital of the national economy at the beginning of 1980 the proportion of the fixed capital newly placed into operation during 1971-1979 was 56 percent, 58 percent of the industrial fixed capital was replaced during that period. During 1979 alone the coefficient of replacement of industrial fixed capital was 7.4 percent.[2]

The cited data attest that in the process of expanded socialist reproduction all the fixed capital, and especially machines, equipment, means of transportation and so forth, are constantly replaced and improved. At the same time the obsolescence of the operating capital accelerates, the rate of replacement increases and the time that the active portion of the fixed production capital is in operation decreases. During 1971-1978 alone the introduction of new technology and the implementation of measures on the organization of labor provided 60 percent of the total increase of labor productivity in industry.[3]

Consequently, the introduction in production of more perfect and productive machines and equipment leads to the decrease of the socially necessary expenditures of labor, which determine the value of new objects of fixed production capital, and, hence, to the depreciation, the loss of a part of the value of similar fixed capital which was put into operation earlier. Therefore, at any given moment the magnitude of the value of the fixed capital of the national economy is determined not by the expenditures of labor, which were embodied during its creation, but by the expenditures which at this time are socially necessary for the reproduction of operating fixed capital. Moreover, the magnitude of the value of the capital to a considerable extent depends on the wholesale prices for means of labor. Thus, scientific and technical progress, periodic massive changes of the wholesale prices for industrial products and of the rates for electric power, thermal energy and transportation and the annual changes of the wholesale prices for select types of capital, as well as the placement into effect of new estimated norms, prices and rates in construction have an influence on the value (valuation) of fixed production capital.

For the indicated reasons machines, equipment and means of transportation of identical productivity, similar buildings and structures and other types of fixed capital, which are on the balance sheet of enterprises and organizations, are evaluated differently--subject to the time of their placement into operation or acquisition. This adversely affects the amount of the amortization deductions for the complete or partial replacement of capital, the profit, the profitability and in the end the evaluation of the work of enterprises or organizations. A considerable increase in the total amount of fixed capital of the proportion of the value of new types of machines and equipment with a lower or higher cost of a unit of production capacity (as against the cost of "old" similar tools of labor) also adversely affects the evaluation of the activity of similar enterprises. In this connection the objective economic need for the determination of the current cost of the reproduction of all the operating means of labor or the revaluation of the fixed production capital existing in the national economy arises during certain periods of time.

It is well known that the cost of the reproduction of various objects of fixed capital is characterized by their replacement value, that is, by the sum of the expenditures on the creation of the same or similar fixed production capital in the prices and under the conditions, which are prevailing at the moment of the determination of the magnitude of the replacement value. Thus, during the revaluation of 1972 the wholesale prices and rates, which were put into effect on 1 July 1967 and were indicated in the corresponding price lists, were taken as the current prices for the machines, equipment and means of transportation being produced by domestic industry. At the same time the changes in the wholesale prices, which were put into effect on 1 January 1970, as well as the wholesale prices indicated in the contract between the supplier and the client, were taken into account for some types of machines and equipment.

There have also been included in the full replacement value of machines, equipment and means of transportation, in addition to the wholesale (contract) price, all the expenditures connected with their acquisition and installation. The replacement value of buildings, structures and transfer equipment was based on the new estimated norms, prices and rates, which were put into effect in construction on 1 January 1969. As a rule, the replacement value of buildings, structures, transfer equipment, machines and equipment, means of transportation and other types of fixed capital is determined during the periods of their mass revaluations, which are carried out periodically in accordance with decisions of the USSR Government.

Mass revaluations of fixed capital are carried out relatively infrequently (the last ones were carried out as of 1 January 1960 and 1972), since they require much addition work in the USSR Central Statistical Administration, USSR Gosstroy, USSR Gosplan, ministries and departments, as well as at enterprises and organizations and, consequently, considerable monetary outlays. Nevertheless, regular (approximately every 10-12 years) revaluations of the tools of labor are necessary, since they are of enormous economic and practical importance. This is confirmed by the results of the revaluation of fixed capital as of 1 January 1972. As was indicated above, it was carried out on the basis of the wholesale prices for industrial products, the rates for electric power, thermal energy and transportation, which were set on 1 July 1967, with allowance made for the change of prices for select types of products on 1 January 1970, as well as the estimated norms, prices and rates in construction, which were put into effect on 1 January 1969.

The revaluation of the fixed capital at cost accounting enterprises and organizations, which was made as of 1 January 1972, made it possible to bring the prices for the previously built or acquired individual objects of fixed capital in line with the changed cost of their production. It showed that in the 12 years which had passed since the preceding revaluation (as of 1 January 1960) the replacement value of all the industrial fixed capital has increased as against the initial (book) value by 9 percent, including by 6 percent for machines and equipment. The increase of the value of the capital resulted mainly from the increase on 1 January 1967 of the wholesale prices for industrial products and the rates for electric power, thermal energy and transportation, as well as from the introduction on 1 January 1969 of the new estimated norms, prices and rates in construction. As a result of the revaluation and the establishment of new norms of amortization deductions the amount of the latter, which was intended for the full replacement of the fixed capital, and the fee for fixed production and working capital increased considerably, and the variety in the valuation of fixed capital at similar enterprises and organizations was eliminated.

For the national economy as a whole the value of the fixed capital of cost accounting enterprises and organizations increased by 73 billion rubles, or 11 percent. At the same time the initial value of one portion of the fixed capital was increased by 106 billion rubles, or 16 percent, while that of another portion was reduced by 33 billion rubles, or 5 percent.[4] In connection with the increase of the value of the fixed capital and the norm of amortization deductions for renovation the amount of the attributable amortization for full replacement increased and the insufficient amortization of the value of the tools of labor in industry, which are being retired due to dilapidation and wear, decreased considerably. The amortization deductions for full replacement for the national economy as a whole increased by 26 percent, as a result of which a realistic financial base was created for the acceleration of the process of the placement and the increase of the efficiency of the use of operating fixed production capital.[5]

Thus, the above-indicated revaluation of the fixed capital made it possible:

to specify the real value of the fixed capital, which is the underlying basis for amortization and the establishment of the amount of the fee for fixed capital;

to obtain more complete and accurate data on the availability and structure of the fixed capital and the degree of its wear, which are necessary for the improvement of national economic planning and the increase of the efficiency of social production;

to create for all cost accounting enterprises and organizations equal, economically sound cost accounting conditions for the determination of the production cost (the cost) of products and the level of the profitability of production and for the formation of economic stimulation funds;

to obtain an economically sound basis for the refinement of the norms of amortization deductions and the creation of the conditions for more accurate estimations for the replacement of the fixed production capital being retired due to dilapidation and wear.

Consequently, the revaluations of fixed capital and the elaboration or refinement on their basis of new norms of amortization deductions with respect to this capital are conducive to the more efficient use of means of labor, the strengthening of cost accounting and the increase of the level of planning at enterprises and organizations.

More than 9 years have passed since the last revaluation of the fixed capital was made. During 1971-1979 in the USSR the fixed capital (including livestock) has increased in comparable prices 1.9-fold, including productive capital by more than twofold and nonproductive capital by 1.7-fold.[6] During the same period the wholesale prices for select types of industrial products were changed annually.

On 1 January 1982 new wholesale prices and rates will be put into effect in industry, while on 1 January 1984 the conversion to new estimated norms and prices will be carried out in construction.

The development and introduction in production of new, more productive and relatively inexpensive machines and equipment, the mass change of the wholesale prices and rates for industrial products, as well as the placement into effect of new estimated norms and prices in construction inevitably lead to great differences in the valuation of similar means of labor, which are in use. The mixed valuation of fixed capital complicates the obtaining of the data which are necessary for the comparison of the amounts of fixed capital for similar enterprises, and therefore does not make it possible to establish correctly its dynamics and the amounts of the attributable amortization included in the product cost.

In the end a dissimilar valuation of the similar fixed capital for similar enterprises has the result that for some enterprises and organizations the amount of the attributable amortization and the fee for capital are greater than for others. Distortions in the development of the product cost and the financial results at similar enterprises are the result. All this, in our opinion, dictates the need for a new revision of the balance sheet appraisal of the fixed capital, that is, its one-time revaluation. The expedience of the revaluation of the fixed capital also stems from the fact that so far a reliable system of the current accounting of the continuous changes in its book value has not been developed.

Along with this the mass change of the wholesale prices for industrial products and the introduction of estimated norms and prices in construction, as a rule, entail the need for the refinement of the standard proportion of amortization, which is intended for the financing of the expenditures on capital repair, since the amount of the amortization deductions for the partial replacement (capital repair) and the very cost of repair are directly dependent on the value of the means of labor, as well as the new value and the life of the spare parts and parts, which are used in repair.

The refinement of the prevailing norms of the amortization deductions for the full and partial replacement of fixed capital is already necessary today. The obtained results, which are cited below, of the comparison of the service life, which is the basis for the prevailing norms of amortization, and the periods of the replacement (the actual service life) of the fixed capital (in years), in particular, attest to this.

	Replacement periods 1976-1978	Standard service life 1978
Industry	23.0	21.3
Including:		
electric power engineering	42.0	33.3
oil drilling industry	20.0	16.7
gas industry	17.0	16.9
coal industry	16.0	15.6
ferrous metallurgy	31.0	23.3
chemical and petrochemical industry	26.0	19.6
timber and wood processing industry	14.6	13.9
pulp and paper industry	28.5	25.0
construction materials industry	19.3	20.0
machine building and metalworking	22.0	21.7
light industry	21.0	22.7
food industry	24.0	23.3
meat and dairy industry	20.5	24.4
fish industry	29.0	22.7
Agriculture	14.0	22.7
Construction	11.5	11.5
Transportation and communications	29.5	27.8
Trade, public dining, procurement, material and technical supply and marketing	26.0	27.8
Production sphere as a whole	20.5	21.7

Thus, the replacement periods (the actual service life) of fixed production capital for the production sphere as a whole is 1.2 years, or 6 percent, shorter than the standard periods. This predetermines the insufficient attribution of the amortization for the full replacement of the fixed capital and leads to the distortion of the cost of products and services and other plan indicators.

The standard service life of means of labor is considerably longer than the actual periods of their replacement in agriculture, trade, procurement, material and technical supply and marketing. For industry as a whole, transportation and communications the replacement periods exceed the standard service life. In the meat and dairy and light industries and the construction materials industry the standard service life is longer than the actual replacement periods.

The expedience of the revision during the 11th Five-Year Plan of the prevailing norms of the amortization deductions both for renovation and for capital repair is also confirmed by the availability in significant amounts of insufficient amortization for fixed capital, which is being removed from operation due to dilapidation and wear, as well as by the incomplete utilization of the amortization deductions which are intended for the financing of capital repair by many enterprises and ministries. According to our calculations, the amounts of the insufficient attribution of the amortization for the full replacement of the fixed capital, which has been removed from operation due to dilapidation and wear, by sectors of the national economy are as follows (as a percentage of the book value of the liquidated fixed capital):

	1976	1978
National economy as a whole	17.7	15.5
Including:		
industry	20.9	21.1
transportation	15.8	13.1
trade	18.5	15.7
contracting construction and installation organizations	12.2	10.1
agriculture	7.1	7.2

The cited data make it possible to conclude that the actual service life of many types of fixed capital in all the sectors of the national economy is considerably shorter than the service life which is the basis for the prevailing norms of the amortization deductions for the full replacement of the capital. As the annual large amounts of insufficient amortization for the tools of labor being replaced attest, many standards of the amortization deductions do not ensure not only the complete reproduction of the corresponding objects on a new, expanded basis, but even their simple reproduction. This once again confirms the need for the refinement of the prevailing norms of the amortization deductions for renovation in the direction of their increase for many types of means of labor with the simultaneous shortening of the standard service life of the latter.

The increase of the norms of the amortization for renovation, as well as the assignment of all the amounts of insufficient amortization on the fixed capital being replaced to the financial results of the economic operations will prompt enterprises and organizations to the more complete utilization of machines and equipment by the timely decrease of the amount of obsolete and worn out fixed capital and the increase of the shift coefficient of the new equipment and the entire pool of machines, which has been brought in line with the number of workers. The efficient use of modern technology is ensured only with the observance of the rated operating conditions, that is, with two-shift operation. The fullest workload of tools of labor, as practical experience shows, is achieved as a result of the implementation of organizational, technical, social and other measures.

As an example it is possible to cite the experience of the efficient use of equipment at the machine building enterprises of Leningrad, where in 1979 the shift coefficient was 6 percent lower than the unionwide coefficient, but at present is 1.49 and exceeds the unionwide level by 10 percent. Here modern types of equipment have been changed over to full two-shift operating conditions. The shift coefficient of the utilization of forge and press machines is 2.78, mechanized and automated lines--respectively 1.9 and 2.0, casting equipment--1.77. Each machine tool in machine building of the city on the average operates 1.5 shifts. The main thing here is that the tendency for the shift coefficient to decrease has been overcome.[7]

The changes of the wholesale prices for select types of industrial products, which have occurred over the past 10 years, and the coming mass change of the wholesale prices and rates for industrial products on 1 January 1982 will inevitably lead to serious changes in the estimated cost of the capital repair of fixed capital.

As practical experience has shown, even disregarding the mass change of wholesale prices for industrial products and the changeover to new estimated norms and prices in construction the amounts of the amortization, which is attributable in accordance with prevailing norms, for the partial replacement of fixed capital do not always conform to the needs for monetary assets for the financing of the expenditures on capital repair. According to our calculations, the actual expenditures on the capital repair of production buildings in 1978 for industry as a whole exceeded by 51 percent the amortization credited for these purposes. The reporting data for industry show that the expenditures on the capital repair of machines and equipment during the same year were only 83 percent of the amount of amortization credited for these purposes. For some industrial ministries the ratio between the total amount of the expenditures on capital repair and the amortization deductions for the indicated purposes in 1978 are cited below.

	Ratio of actual expenditures on capital repair to the amount of amortization deductions for it, percent
USSR Ministry of Power and Electrification	91.6
USSR Ministry of the Petroleum Refining and Petrochemical Industry	102.8
Ministry of the Gas Industry	85.0
USSR Ministry of the Coal Industry	89.9
Ministry of Heavy and Transport Machine Building	89.0
Ministry of Power Machine Building	85.9
Ministry of the Electrical Equipment Industry	95.3
Ministry of Chemical and Petroleum Machine Building	88.3
Ministry of the Automotive Industry	70.7
Ministry of Machine Building for Animal Husbandry and Fodder Production	85.8
Ministry of Construction, Road and Municipal Machine Building	92.7
USSR Ministry of the Timber and Wood Processing Industry	88.9
USSR Ministry of the Construction Materials Industry	100.9
USSR Ministry of Light Industry	93.0
USSR Ministry of the Food Industry	109.0
USSR Ministry of the Fish Industry	89.8

Thus, for the majority of ministries the actual expenditures on capital repair are considerably less than the amount of the credited amortization, while for the USSR Ministry of the Petroleum Refining and Petrochemical Industry, the USSR Ministry of the Food Industry and the USSR Ministry of the Construction Materials Industry they exceed its amount. For industry as a whole the amount of the credited amortization for the capital repair of industrial fixed capital in 1978 exceeded the expenditures for these purposes by 5 percent.

The inadequacy of the amortization deductions for capital repair of some enterprises and organizations and the excess of others are not conducive to the strengthening of cost accounting. In practice this results in the need for their redistribution among enterprises and organizations, which leads to the disruption of cost accounting, since some enterprises include the credited amortization in the cost of the output being produced, while others (those which receive it by way of nonreturnable redistribution) use it to finance the outlays on capital repair without the reflection of these amounts in the production costs and the results of financial activity. Such a use of amortization deductions is at variance with the basic principles of cost accounting and reduces the responsibility of enterprises for the state of preservation of the fixed capital.

Consequently, the inadequacy of the amortization deductions for financing the expenditures on the repair of some types of fixed capital and their excess for others, just as the existence of idle amortization, which is intended for the financing of capital repair, attest that the prevailing norms of amortization deductions, even disregarding the coming change of the wholesale prices for industrial products, also require refinement. It is well known that it should be based on a uniform valuation of similar buildings and structures, similar machines, equipment and other types of the active portion of the fixed capital. Hence, the refinement of the norms of amortization, in turn, presumes the reassessment of the replacement value of the means of labor, which were put into operation after 1 January 1972.

We believe that the elimination of the variety in the valuation of fixed production capital, the creation of the necessary base for the proper calculation of the amortization fund, the fee for fixed production capital, the profit and the deductions from the profit for economic stimulation funds, the refinement of the prevailing norms of amortization deductions, the assurance of equal cost accounting conditions of the operation and the evaluation of the activity of similar cost accounting enterprises and organizations--all this dictates the need to carry out the next revaluation of the fixed capital at the end of the 11th Five-Year Plan. The preparation for its implementation should begin in advance, since this is complicated and responsible work.

The following data attest to the engineering and economic complexity of the onetime revaluation of fixed capital. In addition to the procedural instructions on the revaluation of capital, 170 collections of consolidated indicators of the replacement value of buildings and structures and price handbooks for the revaluation of machines, equipment and means of transportation were prepared for the determination of the replacement value of the fixed capital as of 1 January 1972. More than 150 design and scientific research institutes took part in this work.[8]

Practice has shown that the revaluation of capital by means of the corresponding price handbooks is a labor-consuming and expensive matter, since the compilation, publication and sending out of new price handbooks for tens of thousands of makes and type sizes of machines, equipment and other types of tools of labor require the diversion of an enormous number of economists and engineers from their immediate work for a long time and large expenditures of material resources. Therefore, for the purposes of reducing the physical amount of work and saving material resources and monetary assets, in our opinion, it would be expedient to simplify somewhat the procedure of revaluing the fixed capital: to carry out the object-by-object determination of the replacement value on the basis of consolidated group indicators--coefficients of revaluation (indices of the change of wholesale prices), as Ya. B. Kvasha proposed when discussing the method of revaluing the fixed capital as of 1 January 1972.[9] And whereas at that time it was possible to reject such a method, now, apparently, it is not possible to do without it. For during the period that has passed since the last revaluation the fixed capital in the national economy has increased nearly twofold; consequently, the amount of work connected with its revaluation by means of price handbooks will also increase twofold. Such work is hardly more expedient than revaluation on the basis of well-prepared coefficients.

The consolidated indicators of the replacement value of buildings and structures will be elaborated in the norms, prices and rates, which are to be put into effect on 1 January 1984, while those of machines, equipment, means of transportation and the other types of the active part of the capital will be elaborated in the wholesale prices of industry, which are to be put into effect on 1 January 1982.

For the determination of the coefficients all the fixed capital liable to revaluation should be broken down into consolidated groups, on the basis of their technological purpose, similarity and other parameters, which characterize the given group. For this it is first of all necessary to solve the question of the number of groups of fixed capital, for which coefficients of revaluation should be elaborated. Obviously, the number of groups and the groups themselves with respect to the active part of the fixed capital should be established with reference to the structure of the groups, which exists in the case of the prevailing norms of amortization deductions. This, in our opinion, will also promote the simplification of the work on revaluation.

The indicated operations, in our opinion, should be performed by the ministries and departments with subsequent approval of the prepared list of groups by USSR Gosplan jointly with USSR Gosstroy, the USSR Ministry of Finance and the USSR Central Statistical Administration, which, in turn, elaborate the corresponding methods instructions on the procedure of determining the indices of the change of wholesale prices and provide the corresponding performers with them. At the same time USSR Gosplan and USSR Gosstroy give specific assignments to the ministries and departments for the elaboration of coefficients of revaluation accordingly for buildings, structures, machines and equipment and other types of fixed capital. In conformity with these assignments the ministries and departments with the approval of the USSR State Committee for Prices prepare group coefficients of the revaluation of the capital (indices of the change of the wholesale prices), and then submit them for approval: with respect to buildings and structures--to USSR Gosstroy, with respect to the other types of capital--to USSR Gosplan.

On the basis of the approved group coefficients of the revaluation of the fixed capital they determine the replacement value of buildings, structures, machines and equipment, means of transportation and other types of fixed capital by multiplying the full book value of each inventorial object to be revalued by the coefficient of the change of the wholesale price for the corresponding group. The overall direction of the work on the revaluation of the fixed capital, in our opinion, should, as in past years, be carried out by the USSR Central Statistical Administration jointly with USSR Gosplan, USSR Gosstroy, USSR State Committee for Prices and the USSR Ministry of Finance with the enlistment of the corresponding ministries and departments.

It is likely that in isolated cases the result of the revaluation of the capital by the proposed method will not be entirely accurate. But, as practice has shown, errors are possible when using any method of revaluation, including by means of price handbooks, since no one price handbook can cover all the diversity of models, makes and type sizes of machines and equipment. Moreover, as the experience of the revaluation of fixed capital on 1 January 1972 showed, a large number of the machines listed in one price handbook or another are valued not according to special costings, but by the same method of multiplying the old wholesale price by the index of the change of the wholesale prices of the corresponding group or subgroup.

It is well known that after the 1972 revaluation of the fixed capital a mass change of the wholesale prices and rates was not implemented. Consequently, the absolute majority of machines, equipment, means of transportation and other types of the active part of the fixed capital, which were acquired after the 1972 revaluation, are included on the balance sheet of the enterprise or organization in the old valuation. In this connection we consider legitimate in elaborating the coefficients of the revaluation of capital the use by ministries and departments as auxiliary materials of the handbooks of wholesale price indices, which are published by the USSR State Committee for Prices, since the average changes of the wholesale prices which formed in connection with their coming mass change as of 1 January 1982 will be reflected in them.

Taking into account what has been said, the revaluation of the fixed capital after the mass change of the wholesale prices and rates in industry and the placement into effect of the new estimated norms, prices and rates in construction seems necessary. This revaluation and the new norms of amortization deductions, which have been elaborated on its basis, will serve as an additional stimulus for the more intensive and efficient use of fixed production capital, the acceleration of its turnover rate and, consequently, the increase of production efficiency. The revaluation of the means of labor and the elaboration of new norms of amortization deductions will also play a positive role in the further strengthening of cost accounting, since the improvement of the planning of the product cost, the profit and the profitability of production, the amounts of the deductions for incentive funds and the payments to the budget for fixed production capital depend on the realistic valuation of the fixed capital and sounder norms of amortization.

FOOTNOTES

1. "Narodnoye khozyaystvo SSSR v 1979 g." /The USSR National Economy in 1979/, Moscow, "Statistika", 1980, pp 112-115.

2. Ibid., pp 54, 158, 159, 357.

3. Ibid., p 94.

4. "Nardonoye khozyaystvo SSSR v 1972 g." /The USSR National Economy in 1972/, Moscow, "Statistika", 1973, p 61.

5. PLANOVOYE KHOZYAYSTVO, No 11, 1974, p 64.

6. "Narodnoye khozyaystvo SSSR v 1979 g.," p 54.

7. See KOMMUNIST, No 17, 1980, pp 39-45.

8. VESTNIK STATISTIKI, No 12, 1972, p 42.

9. Ya. Kvasha, "On the Revaluation of Fixed Capital (Methodological Questions)," VOPROSY EKONOMIKI, No 3, 1969.

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CSO: 1820/207

SOURCES OF FINANCING FOR NEW TECHNOLOGY DISCUSSED

Moscow FINANSY SSSR in Russian No 6, Jun 81 pp 37-41

[Article by candidate of economic sciences A.I. Tamarkin: "Sources of Financing for Scientific and Technical Progress in the Association"]

[Text] Resolution of the vast tasks in the development of the economy and raising the level of the national well-being advanced by the CPSU for the 11th Five-Year Plan and the period through 1990 will depend largely on the utilization of the achievements of scientific and technical progress. The "Main Directions in the Economic and Social Development of the USSR 1981-1985 and for the Period through 1990" stress that "during the 11th Five-Year Plan the development of science and technology should be to an even greater extent subordinate to the resolution of economic and social tasks in Soviet society, the accelerated transfer of the economy onto the path of intensive development and raising the efficiency of social production."

In the Uralmash production association scientific and technical progress can be visualized schematically in the form of two stages. The first is the conception and development of ideas, conclusions and hypotheses. The second stage presupposes the start-up of production of new equipment and its introduction into mass production. These two stages are organically interlinked.

The development, for example, of a fundamentally new design for the EG-12 pit excavator with a 12-cubic-meter bucket for coal extraction and of a caterpillar pit excavator (for use in the north) included testing of the main model of the EG-12 during the first quarter of 1980 and preparation of the technical documentation for series production. With regard to the caterpillar pit excavator (for northern regions), the following was envisaged for 1980-1981: preparation of the technical specification and determination of the national economic effect of the excavator (first and second quarters of 1980); start-up and production testing of the experimental model (third and fourth quarters of 1980); and preparation of technical documentation for series production (fourth quarter of 1980 and first quarter of 1981).

Each stage has its own features and produces its own problems and unresolved questions of financing for scientific and technical progress in the association. One of the most important problems is connected with, in our opinion, the financing of the scientific research done by the Uralmash association through the Tyazhmash Scientific Research Institute.

Table 1 (thousands of rubles)

Factors	Association in toto	including Uralmash zavod	Mechanical plant for mine safety equipment	Plant for drilling and metallurgical equipment	Bulanashskiy machine-tool plant
No of measures	120	98	12	8	2
Introduction costs: total	30972	30248	109	233	332
including in 1980	4698	4490	10	159	39
Savings: annual total	1677	1493	19	79	86
including: in 1980	1477	1395	8	41	33

At least two conclusions can be drawn from the above table. First, costs on the development of science and technology promote improvement in all aspects of both the customer and the producer of new output, which is reflected in the national economic efficiency of these costs. Second, the slight slow-down in the recouping of expenditures for scientific research work in 1980 as against preceding years was caused mainly by the fact that in the concluding year of the five-year plan provision had been made for the association to have preferential growth in expenditures to improve technology and for mechanization and automation with their relatively long period for reouping costs.

The problem of increasing the efficiency of expenditures on science gives rise to three basic and very important questions:

a) it is not only correct to select and plan the subject and direction of scientific research but also to make provision in the plan for optimum periods for their introduction into series production;

b) to differentiate between basic scientific-technical development of a sector nature and developments of an applied nature.

For example, in the Tyazhmash Scientific Research Institute, development of fundamentally new models of rolling equipment, continous casting equipment, pressing equipment, mining equipment, oil-drilling equipment and other nonstandard equipment could be considered as the former. They are conducted in accordance with the national economic plan and are financed as a rule from the budget. Work of an applied nature would be improvements in individual design assemblies for machines and equipment or the acoustic characteristics of crushing mills or mills in order to reduce noise, research on vibration in turbines in working places in order to prolong their service life, and research on the possibilities of reducing material and labor inputs through design modifications to assemblies. These measures are carried out according to the plans of the ministry or association and are funded from various sources: the unified fund for the development of science and technology, funds provided by the client and others.

c) to organize a mutually linked planning, economic and financial measures to raise the effectiveness of scientific research expenditures in all areas and spheres of scientific activity and to introduce cost accounting at each stage of scientific and technical progress in the association.

Let us examine in more detail the questions of financing scientific research.

At the Uralmash association it is primarily work of a theoretical nature or that has all-state significance that is financed by budget appropriations; this work is included in the five-year plan for the development of the USSR. It is usually carried out by the leading scientific research organizations of the USSR Academy of Sciences and the academies of sciences of the union republics, and also by the head scientific research institutes of the ministries and administrations. Work of an applied nature is usually done in accordance with economic agreements using client funding. In recent years there has been a marked increase in the role of enterprises and economic organizations in financing scientific research work (see Table 2). At the Uralmash association, for example, testing and final improvements on the KKA-1500/180 spindle breaker so that it can operate more efficiently and productively under conditions of permafrost are being carried out on the basis of an economic agreement with the Yakutzoloto production association. A total of R76,000 will be spent to provide an anticipated savings of R361,000 from this work, In accordance with an economic agreement with the Verkhne-Saldinskiy metallurgical plant personnel at the Tyazhmash Scientific Research Institute are studying the process of extrusion of articles on a stretch-leveling machine using a force of 1,500 tons in order to improve the quality of sections, increase the output of finished rolled sections and introduce a permanent quality control system. With total expenditures of R25,000, the expected savings are reckoned at about R40,000. Similar work based on economic agreements is being done with the Nizhne-Tagil metallurgical combine, the Verkh-Isetskiy metallurgical plant, the Balakhany oil refinery in the Azerbaijan SSR and so forth.

The financing of scientic research of an applied and sector nature using client funds became common practice at the Uralmash only during the 10th Five-Year Plan, and it makes up 7-8.7 percent of the total sun used to finance scientific research. Even the most approximate calculations show that during the 11th Five-Year Plan up to 15 percent or more of all expenditures on scientific research on work of an applied or sector nature can be financed from this source.

In the party and government decree on improving the economic mechanism (No 695) the need is stressed to complete during the first years of to the 11th Five-Year Plan the transfer of all scientific research centers, production associations and ministries to a cost-accounting organization of work on the development, start-up and introduction of new equipment on the basis of order-schedules and economic agreements.

The acceleration of scientific and technical progress depends largely on how rapidly scientific and technical achievements are developed and introduced in series and mass production. In the acceleration of the introduction a major role is played by the system of financing applicable to the features of this stage of scientific and technical progress.

It is common knowledge that the development and introduction of new equipment at enterprises and associations can initially worsen their economic indicators A certain contradiction arises between the present interests of the association, sector and the entire national economy and the requirements for long-term development. It is essential to resolve these contradictions in the interests of accelerating technical progress. The lack of interest on the part of associations to assimilate new equipment, especially in the early years, is explained by a number of circumstances. First, during the period of assimilation, output costs more because of the extra expenditures on planning, design and other work involved in building models and organizing series production. Second, profit drops slightly, labor costs increase and the volume of output falls off, taking into account the agreements concluded, orders received and schedules given out. In this kind of situation, in comparison with other associations, those assimilating new equipment find themselves in a disadvantageous financial position. Practice shows that the contradictions can be resolved only with the aid of an extensive system of financial-economic measures that offer incentive for a production collective to assimilate and start up new production. The first thing that must be done is to compensate the enterprise or association for the cost of production during the first years of assimilating new equipment, and this means that the source of the compensation must be determined. For example, itcan be done through special association or ministry funds, credit or wholesale prices.

The most common, universal and simplest method for compensating additional costs can be to increase the wholesale prices for new output. The price should, on the one hand, compensate for all expenditures incurred by the association in the production of the new output, and on the other, it should insure for the association a level of profitability at least as high as before the assimilation. * It is not possible, however, to ignore the fact that prices not only reflect the interests of the manufacturers but also concern the interests of the consumers of the product, and high prices during the first years of assimilation will restrain the acquisition of the new equipment. The consumer cannot consider new, progressive equipment divorced from its cost. Its application should hold promise for the consumer of a certain saving; otherwise,he will not be interested in the new equipment.

Practice, meanwhile, including at the Uralmash, indicates that insufficient account is taken in wholesale prices of the savings effect and its proportionate distribution between consumer and producer.

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*V.N. Maslennikov and D.S. Molyakov. "Denezhnyye nakopleniya v promyshlennosti" [Monetary Savings in Industry], Moscow, Finansy Publishing House, 1979, pp 111-112.

Given a total profitability of 26-27 percent for rolling equipment, newly developed equipment for continuous rolling of blanks has a profitability of 31.2 percent (4.2 to 5.2 points higher). In this case, the increased price not only compensates the association for the additional expenditures on the development and production of the new equipment but also encourages the collective with the additional profit realized from its sale to try to achieve a rise in the scientific and technical level of the output produced. Prices "work out" differently for sintering equipment where average profitability from production is 22.9 percent while profitability for new models is no greater than 19.6 percent. Moreover, the AKM-312 sintering machine specially developed for the Cherepovets metallurgical combine that required additional expenditures, has a profitability of 17.6 percent in the wholesale price. It is clear that this price not only does not compensate the association for the extra expenditures and fails to provide incentive for the production of the new sintering equipment, but, on the contrary, retards technical progress in this instance. In our view, in this case the effect from the development of the new equipment is also split unevenly between producer and consumer.

It is probable that compensating for expenditures on development and assimilation of new equipment cannot be set only by prices, and even less by raising them. A special system for financing this kind of expenditure is needed instead of the centralized regulation of prices for new output.

One real economic lever that accelerates the start-up of production for new equipment is the credit form of compensation for extra expenditures. The bank offers the associations credit over a period of up to two years to pay for the labor of those engaged on the development and assimilation of new equipment and for other costs connected with the implementation of highly efficient measures to develop science and technology.

It should be noted, however, that even though it has been extended by decree No 695, the sphere in which this credit can be utilized is nevertheless extremely restricted. First, credit stimulates the development and assimilation only of that new equipment whose production rapidly insures considerable additional profit for the collective. It is therefore not fortuitous that that the proportion of credit in the financing of scientific and technical progress at the Uralmash association does not exceed 11.3 percent (see table 2) and there is no marked tendency for this to increase. Second, this credit is offered under guarantee from the ministries, administrations or all-union (or republic) industrial associations, which naturally sets organizational and legal barriers against its use. Moreover, it is repaid by assets from the unified fund for the developmentof science and technology and not through the additional savings effect. It would expedient, as some economists have suggested, to repay such loans more through the additional profit made from the sale of the new equipment.

Methods for financing the development of science and technology will be more efficient under conditions in which there is not only economic but also organizational unity. The process of assimilating new equipment is inseparable from scientific research; they are links in the same chain, and the stronger and more effective it is, the closer they are interconnected and interact. Taking this circumstance into account, the July decree No 695 provides for the "creation in ministries and administrations of a unified fund for the development of science and technology to finance scientific research, test and design and technologic work and to compensate for expenditures connected with the development and assimilation of new kinds of output and technologic processes and the introduction of the scientific organization of labor, and also to finance additional expenditures to improve output quality and the higher costs during the first years that new output is produced."

Some positive experience has already been gained in the practical realization of this idea. A start has been made experimentally on the assimilation and use of the unified fund for the development of science and technology in the Ministry of Electrical Equipment Industry, the Ministry of Heavy and Transport Machine Building, and others.

The unified fund is formed through deduction from the profit of the enterprises and associations of the ministries. Budget allocations for the development of science and the introduction of new equipment for the ministry are either completely cut off or sharply reduced. In the Uralmash association, during 1980 deductions to this fund amounted to slightly over 19 percent of the balance profit; the plan figure for 1981 is about 17.3 percent. The size is obviously insignificant, the more so since Uralmash finances more than 70 percent of all additional expenditures on the development and assimilation of new equipment from these assets.

The following items are being financed from the unified fund for the developmentof science and technology:

Item: planned expenditures on scientific research, test and design and other work carried out by the Tyazhmash Scientific Research Institute and the association plants. This includes, for example, research by the personnel of the scientific research institute on noise and vibration in drilling installations (estimated costs of R100,000, period of work, through 1983), acoustic characteristics of crushing mills and mills in order to reduce noise (R75,000, through 1981). During the period 1975 through 1982 expenditure on the development of mixed units in the cold-rolled sheet shop at an estimated cost of R900,000 was financed from the unified fund for the development of science and technology. The research has as its aim improvement in the quality of rolled items and the productivity of rolling equipment, reductions in capital expenditures and amounts of metal used, reductions in the size of production areas and cutting back on air and water pollution and so forth.

Item: compensation for extra expenditures by enterprises and associations on assimilating new equipment and improving the quality of output before series production. These are expenditures connected with improving the productivity and service life of machinery and equipment and improving their qualitative characteristics. Thus, using assets from the unified fund, research is done on methods of curve straightening and the sulfur content and rifling on steel beams using the methods of bending and drawing (estimated cost R120,000). Research is being done (at an estimated cost of R25,000) on the possibility of improving the productivity and service life of the EKG-20 pit excavator with the aid of a rigid, half-side bucket.

Item: additional expenditure incurred by the association to obtain the Mark of Quality for its products. Last year, for example, 18 models of machinery and equipment producing a savings of R415,900 in the national economy receieved funding from the unified fund for the developmentof science and technology to obtain the State Mark of Quality.

Item: planned expenditures to improve the organization and management of industrial production. Assets from the fund are used extensively in the association in order to introduce computers and automated management systems and to carry out metrologic inspections. For example, work has been completed on the development of algorithms and function charts for stoppages and slowdowns in work on a standby mill for pipe rolling based on a microprocessor and an "Elektronika" minicomputer at an estimated cost of R50,000. Work continues on the development of a program package for designing weight-bearing components with complex profiles (R500,000) and so forth.

Item: other costs connected with scientific and technical progress in the association.

Table 2 (percentages)

Sources	for scientific work			for production assimilation and introduction		
	year			year		
	1979	1980	1981 (plan)	1979	1980	1981 (plan)
Budget allocations	-	-	-	-	-	-
Assets from the unified fund for the development of science and technology	38.2	37.2	40.0	38.3	34.2	36.5
Client assets in accordance with economic agreements	6.6	6.8	6.8	0.2	1.9	1.3
Gosbank credit	2.3	3.2	3.6	5.9	8.1	7.5
Other sources (production costs, production development fund and so forth	2.7	1.8	0.9	5.8	6.8	3.4
Total	49.8	49.0	51.3	50.2	51.0	48.7

Thus the unified fund finances both scientific research and the assimilation of new equipment. A stable basis is being created for comprehensive financing of the entire cycle of "science--technology--production" and providing incentive for production collectives to shorten this cycle.

Sources of financing scientific and technical progress in the Uralmash association are distributed as shown in Table 2.

The experience of the Ministry of Heavy and Transport Machine Building has shown that the creation of the unified fund for the developmentof science and technology has helped to accelerate technical progress in the sector and to raise the efficiency of scientific research in production associations. Lead-times needed for the development and assimilation of new kinds of articles in the association have been cut back by a factor of 1.8-2.5 while the savings effected from the introduction of new equipment has grown by a factor of 7.5.

No less importance attaches to the question of differentiation in assets from the unified fund used for scientific research work and for test and design work. As has already been shown, this fund has absorbed the expenditures earlier incurred using various sources, namely the budget and production costs. Last year at the Uralmash association 52.1 percent of the total available from the fund for the development of science and technology was used for scientific research and test and design work, and 47.9 percent for the assimilation and introduction of new equipment. In 1981 these figures will be 52.3 and 47.7 percent respectively. *

The ratio varies year by year because the association's requirements for funds for the development of science and technology are not the same in all periods. This is quite regular. The more important thing is make the correct selection of the ratios as conditioned by the prospects for the development of the sector and of the individual association. The fact that it is possible to manipulate resources within the framework of the unified fund for different but mutually connected ends should not give rise to one-sidedness in decisionmaking but should be based on a comprehensive approach to the management of everything that touches on scientific and technical progess in the association.

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*This is noticeably different from the ratios as a whole in the Ministry of Heavy and Transport Machine Building, the Ministry of the Electrical Equipment Industry and the Ministry of Chemical and Petroleum Machine Building. In 1978, the figures were as follows in these ministries: 34.2 and 65.8 percent; 65.4 and 34.6 percent; 44 and 56 percent. cf. S.A. Sitaryan. "Upravleniye i pribyl'" [Management and Profit], p 138.

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INTRODUCTION OF NEW TECHNOLOGY

MARCHUK DISCUSSES MOSCOW'S TECHNOLOGICAL RESEARCH

Moscow MOSKOVSKAYA PRAVDA in Russian 11 Jul 81 p 2

/Article by G. Marchuk, deputy chairman of the USSR Council of Ministers, chairman of the USSR State Committee for Science and Technology, academician: "Efficiency Plus Saving"/

/Text/ Moscow is a true center of the country's scientific and technical progress. The headquarters of Soviet science--the USSR Academy of Sciences, academies of medical and pedagogical sciences and the All-Union Academy of Agricultural Sciences imeni Lenin--is located there. Hundreds of scientific research and planning institutes and design offices and dozens of higher educational institutions are concentrated in the city. Hundreds of thousands of people work in scientific institutions. They perform a significant part of all the research conducted in the country. In the capital there are about 40 scientific production associations. To utilize this vast potential efficiently and soundly during the 11th Five-Year Plan means to make a weighty contribution to the realization of the historical decisions of the 26th party congress.

The collectives of a number of Moscow enterprises took the initiative to develop a movement for a wide introduction of the achievements of science and technology into production, which make it possible to ensure the maximum saving of labor, material and power resources. This initiative was approved by the CPSU Central Committee. I would like to discuss some problems connected with the development of this valuable undertaking.

A successful development of scientific and technical progress depends on the coordinated work of scientific institutions, scientific production and production associations and higher educational institutions. The outstanding achievements of Soviet science and technology in the area of development of atomic power engineering, in the conquest of outer space, in the control of widespread diseases and in the creation of electronic, microbiological and other new sectors of industry are widely known all over the world.

I would like to stress that these and many other achievements began with fundamental scientific research. Important fundamental scientific ideas open up new paths for the development of science and determine the prospects for scientific and technical progress. We are rightfully proud of the results of work of scientists at the Moscow institutes of the USSR Academy of Sciences, who not only made an outstanding contribution to the knowledge of laws governing the material world, to the investigation of the universe and to the study of the processes of social development, but also did a great deal for the solution of important national economic problems.

We must continue to see to it in every possible way that the attained high level of fundamental and applied research of academic institutes is retained, strengthen and expand their experimental base and take measures to accelerate the introduction of their achievements into practice. Sectorial scientific research institutes and industrial enterprises in Moscow should actively participate in the realization of these achievements. At the same time, it is necessary to proceed from the instruction of Comrade Leonid Il'ich Brezhnev, who stated the following at the 26th party congress: "The country is badly in need of a greater concentration of the efforts of 'large-scale science,' along with the elaboration of theoretical problems, on the solution of key national economic problems and on discoveries capable of introducing truly revolutionary changes into production."

Science in higher schools now has great potentials. Having available highly skilled professorial and teaching personnel, many higher educational institutions in Moscow are recognized centers of scientific thought and make an important contribution to the development of science and the national economy.

Such leading higher educational institutions of our country as Moscow State University, the Moscow Order of Lenin and Order of the Red Banner of Labor Higher Technical School imeni Bauman, the Moscow Engineering Physics Institute, the Moscow Power Institute, the Moscow Aviation Institute, the Institute of Steel and Alloys and many others can be mentioned.

Moscow State University is rightfully the flagship of our higher schools. Its collective of many thousands of people conducts scientific research in almost all branches of modern knowledge. The results of 400 completed scientific investigations were introduced into the country's national economy in 1980 alone. The economic benefit totaled 25 million rubles. The capital's enterprises, with which the university fruitfully cooperates, include the Kauchuk Plant, the Moscow Order of the Red Banner of Labor Automobile Plant imeni Leninist Komsomol, the Stroyplastmass Association, the Factory imeni Sverdlov and the Moscow Water Supply Trust.

Unfortunately, however, there are also higher educational institutions where efficiency is still low, the gain from the introduction of research results hardly covers the expenditures on them and the transfer of research results to industry extends over many years. Unsuccessful scientific establishments are still encountered in higher educational institutions, including among scientific research problem laboratories performing secondary and nonurgent work.

State bodies and sectorial ministries and departments must intensify their attention to problems of financing and material and technical supply for research conducted in higher educational institutions. Most higher educational institutions cannot place their work at the proper level owing to the lack of the necessary laboratory, experimental and production and technical base and, as a rule, national economic enterprises are not involved in the training of their personnel right up to the entry of young specialists into employment. It is necessary to more widely and boldly utilize enterprises, scientific research institutes and design offices as the base for training students in higher courses.

There is another problem. More than 30,000 graduate students study in the capital. However, we do not always train highly skilled specialists in the trends needed, for example, laser engineering and plasma processes. Thus, only eight candidates of sciences are being trained in powder metallurgy this year! At the same time, the number of specialists in traditional fields turned out is 1.5 times as high as needed.

The largest number of scientists and specialists is concentrated in sectorial scientific research institutes and design offices in the capital. Such leading scientific research organizations as the Institute of Atomic Energy imeni Kurchatov, the Central Scientific Research Institute of Heavy Machine Building, the All-Union Scientific Research and Planning-Design Institute of Metallurgical Machine Building, the All-Union Electrical Engineering Institute imeni Lenin, the Central Institute of Aircraft Engines, the All-Union Scientific Research Institute of Light Alloys, the State Scientific Research and Planning Institute of the Rare Metals Industry, the Physicochemical Institute imeni Karpov and many others are widely known for their advances.

The cooperation of the All-Union Scientific Research and Planning-Design Institute of Metallurgical Machine Building, the Central Scientific Research Institute of Automobiles and Automobile Engines, the Tulachermet Scientific Production Association, the Scientific Research Institute of Technology of the Automobile Industry and others with the AvtoZIL Association, in which the institutes of the USSR Academy of Sciences and of the Ukrainian Academy of Sciences also participate, is a striking example of the great contribution of sectorial scientific research institutes to scientific and technical progress. The plan of this cooperation contains about 300 topics. Laser welding, new technology of pinion rolling, control automation and many other developments ensure a high technical level of production and quality of output.

Sectorial and academic institutes and higher educational institutions in Moscow participate in the cooperation with production associations and enterprises on the basis of the formed scientific research trend and the capabilities of the experimental and pilot base; in brief, with due regard for their own specific features. However, there are many common fairly important problems for all the enumerated scientific institutions. They should jointly solve the problems set by the 26th party congress.

First of all, this involves the maximum possible saving of labor resources, which is especially urgent for Moscow. Mechanization and automation are the main trend in the labor saving scientific and technical policy. Extensive work on the mechanization and automation of production is done at many enterprises in the capital, including at the Plant imeni Vladimir Il'ich, the Krasnyy Proletariy Plant, the Plant imeni S. Ordzhonikidze, the Borets Plant, the Kompressor Plant and so forth. Nevertheless, on the whole, the problem of reducing manual labor at the capital's enterprises still remains acute and requires additional efforts.

Meanwhile, the analysis made by the State Committee for Science and Technology with the participation of specialists and scientists shows that an extensive utilization of the mechanization and automation equipment already developed and mastered in production makes it possible to reduce the number of workers engaged in manual labor to one-fourth. The experience of advanced Moscow plants confirms the reality of attainment of such indicators.

Unfortunately, however, as of now the volume of production of manipulator robots does not meet the increased demands of the national economy, including the needs of Moscow's enterprises. Therefore, thought should be given to the advisability for the specialization of one of Moscow's major enterprises in the output of this equipment, especially as many of the city's scientific research institutes, higher educational institutions and enterprises participate in the all-Union program of work on manipulator robots.

It seems advisable to record work places at Moscow's enterprises for the purpose of uncovering operations at which manual labor is used and to determine the list of equipment, including automatic manipulators, making it possible to replace manual labor with machine labor at these operations.

Apparently, it is necessary to entrust the city's leading technological organizations with the modernization of existing and the development of fundamentally new technological processes with the use of manipulators. The organization on a cooperative basis of the production of models of automatic manipulators with program control, as well as of the accessories for them, necessary for Moscow enterprises can be of great benefit.

The use of processing centers of multipurpose automatic machine tools with program control in combination with manipulator robots is a new tendency in the development of automatic production facilities. To ensure such a high level of automation, it is necessary to widely use computer equipment. More than 90 Moscow organizations and enterprises and many higher educational institutions in the capital participate in this work.

It should be noted, however, that automated systems for controlling technological processes are introduced at insufficient rates in Moscow. Only 39 systems, or less than 3 percent of the total number of the automated systems for controlling technological processes introduced in the national economy, were put into operation during the past five-year plan. Ministries and departments should analyze the possibility of using such systems at Moscow enterprises and draw up a plan for their introduction during the 11th Five-Year Plan. It seems to us that party organizations should place these problems under special control.

The automation of planning and designing is no less important. After all, in Moscow there are hundreds of major planning and design organizations, in which collectives of many thousands of people work. An increase in the productivity of their labor and the disengagement of part of the workers represent a vast potential during the 11th and subsequent five-year plans. For example, the use of the system of automated planning in the All-Union Scientific Research Institute of Electromechanics made it possible to accelerate the development of asynchronous electric motors five- to six-fold. As a result of the optimization of design solutions an annual saving of about 1,000 tons of electrotechnical materials is attained and 150 million kilowatt hours of electric power are saved annually during the operation of electric motors.

Finally, we must not fail to mention the automation of scientific research. This trend increases the labor productivity of scientific workers three- to five-fold, speeds up research and produces a great national economic effect. However, it is impossible to establish automation systems without personnel familiar with modern methods.

A few words should also be said about automated production control systems. The capital is a planning and scientific center for control automation. An overall object program for the establishment and development of interconnected automated systems for controlling the city economy for the 11th Five-Year Plan and for the period until 1990 was examined and approved at the joint meeting of the board of the State Committee for Science and Technology and the executive committee of the Moscow City Soviet in March of this year. Provision was made for an accelerated establishment of computer centers for collective use, primarily in construction, public health, transport, trade and public dining, which are to be unified into a single computer network by means of a data transmission system.

This is extremely necessary, because the number of computer centers in Moscow, that is, 742, has become intolerably large. More than 2,000 computers operate in these computer centers. They are serviced by a large personnel and are not used efficiently. Apparently, the time has come to simply change over to large computer centers for collective use.

In the last few years alone science has enriched industry with a number of major new ideas and developments. Powder metallurgy, which is developing before our eyes, and methods of hardening and corrosion resistance coating can be examples of such developments. Laser and plasma technology are invading our life. They open up fundamentally new possibilities for the treatment of materials and the development of efficient technological processes. Methods of nondestructive control of materials and articles are developing rapidly. Significant advances have been made in the development of technology for the production of ultrapure, ultrahard, heat resistant, plastic, composite and other materials.

Often, however, ideas are not rapidly embodied in technological processes and equipment. Such a situation gives rise to a number of major problems in national economic sectors. The concentration of the technological potential is one of the most significant. The establishment of powerful sectorial technological centers with the inclusion in their structure of the corresponding scientific research and technological institutions, as well as experimental bases and production facilities for the manufacture of technological, including nonstandard, equipment could become its efficient form. This would make it possible to solve the problems of development and introduction of energy saving, metal saving, waste-free and other efficient technological processes into the national economy effectively and on a high level. This represents a big field of activity for scientists, production workers, directors of departments and ministries and party organizations in the capital.

The enumerated, as well as many other, problems connected with the development of scientific research and the further acceleration of scientific and technical progress require an improvement in the entire activity of scientific research, planning and design organizations. The decisions of the 26th party congress contain specific instructions for the USSR Academy of Sciences, the USSR State Committee for Science and Technology and ministries on the need to carry out work on the evaluation of the scientific and design base of various sectors and on the development of proposals on the regrouping of scientific forces. This work is already being done.

The commissions of the State Committee for Science and Technology, which included prominent scientists and specialists, checked the activity of 38 scientific organizations of 20 ministries and departments. They made definite advances. At the same time, the work of a number of collectives does not meet the tasks of acceleration of scientific and technical progress. For example, the board of the State Committee for Science and Technology considered the work of the scientific research problem laboratory for automation of production processes at the Moscow Forestry Engineering Institute unsatisfactory. It could not organize the proper communication with the appropriate sector. The USSR Ministry of Higher Educational Institutions was instructed to examine the problem of the advisability of its further existence.

The State Committee for Science and Technology plans and continues to make systematic checks of the efficiency of work of scientific research and design organizations with the participation of scientists at the USSR Academy of Sciences, ministries and departments. We hope for an active participation of the city's party organizations in this matter.

Planning and administration are of great importance in the development of scientific and technical progress. The 26th CPSU Congress determined the need for the further extensive use of program-object methods of planning. Fulfilling the decisions of the congress, the USSR State Committee for Science and Technology, the USSR State Planning Committee, the USSR Academy of Sciences and the USSR State Committee for Construction Affairs approved 160 overall scientific and technical proggrams for 1981-1985, including 38 object programs. They are characterized by the fact that they are directed toward the solution of scientific and technical problems of an intersectorial nature and encompass all the links of the "science-production" cycle in the area of development of fuel-power and agrarian-industrial complexes, machine building, chemistry, metallurgy, transport, public health, the production of consumer goods and so forth.

A large number of scientific research organizations and industrial enterprises in Moscow participate in the fulfillment of the assignments envisaged by overall scientific and technical programs. Many of them are the head executors of the programs as a whole, or of their individual assignments. Moscow organizations and enterprises will have to fulfill more than one-third of all the assignments included in the programs.

Scientists, engineers, workers and all working people in Moscow, utilizing the accumulated experience and developing the famous labor traditions of the people of Moscow--to be in the first rows of the fighters for scientific and technical progress--are called upon to make and, undoubtedly, will make a worthy contribution to the fulfillment of the tasks set by the party. The development of the initiative that sprang up among the capital's advanced collectives and was approved by the CPSU Central Committee will become a powerful weapon in the fight for an increase in production efficiency and for the saving of national economic resources.

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